

Specification For Approval

Date: 2009 / 09 / 09

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Version: 1.0

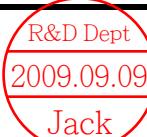
Customer : 研華股份有限公司

Customer P/N : /

INVAX P/N : AN8921F-5701SM

Description : Antenna

Cortec Checked By:



Customer Approved By:



INVAX System Technology Corp.
4F. No. 815.Chung Hsiao East Rd.,Sec.5
Taipei, TAIWAN

TEL:886-2-2788-5218 FAX:886-2-2783-1658
<http://www.invaxsystem.com>



Cortec Technology Inc.
Xian-Xi Industrial, Sha-Tou Administration Zone,
Chang-An Town, Dong-Guan City, Guangdong
Province, China
TEL:86-769-85388261 FAX:86-769-85317869
<http://www.cortec.com.cn>

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Product Number: AN8921F-5701SM

Product Name: Antenna



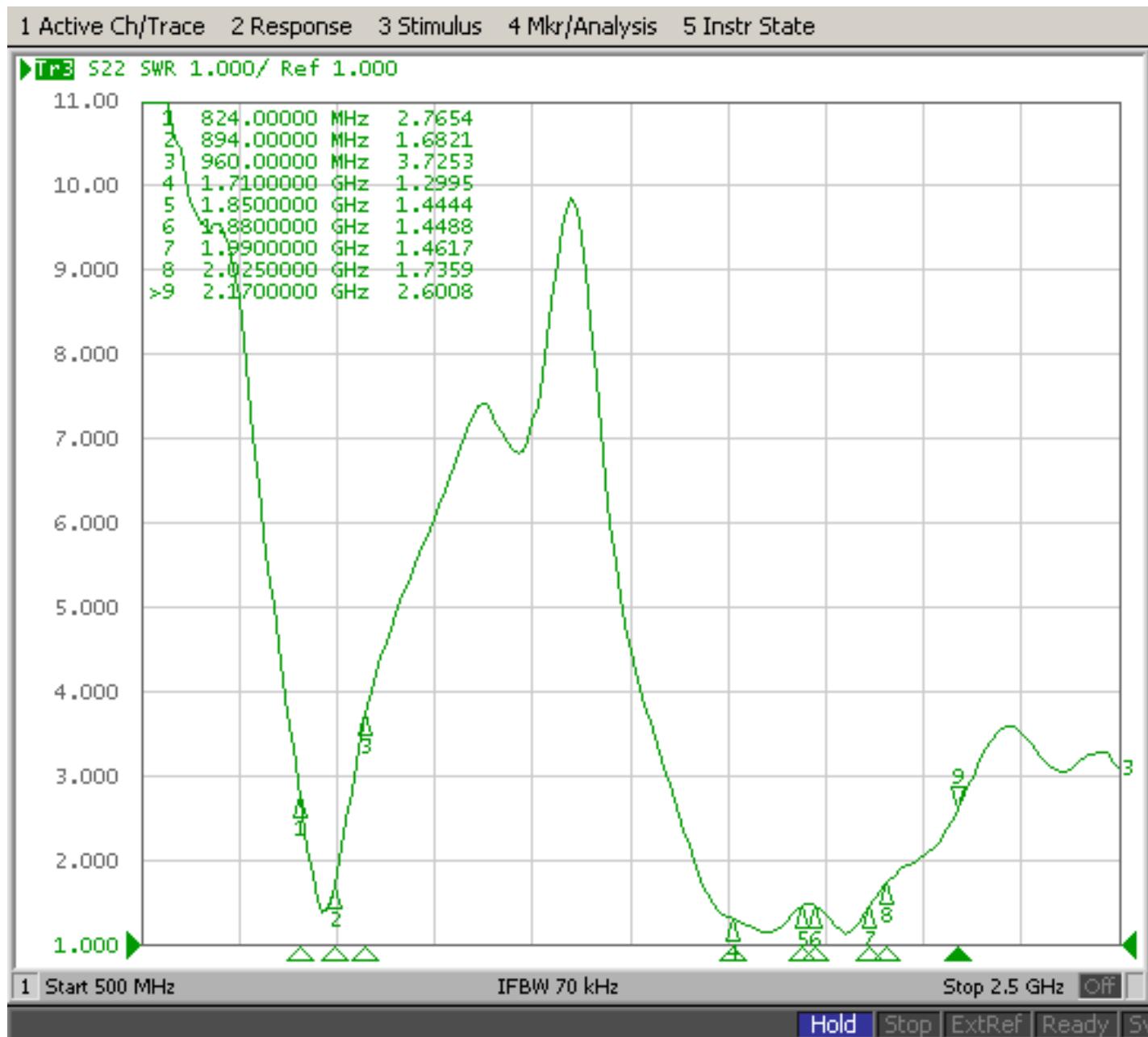
1. Specification

Sample Photo	
A photograph of the antenna, showing a dark, cylindrical body with a ribbed connector at one end and a flared base.	
A. Electrical Characteristics	
Frequency	824 ~ 960 MHz 1710 ~ 2170 MHz
S.W.R.	<= 6.0 @ 824 ~ 960 MHz <= 4.0 @ 1710 ~ 2170 MHz Tested at 290mm Square Ground Plane
Antenna Average Gain	- 10 ~ - 6dBi @ 824 ~ 960 MHz - 8 ~ + 1dBi @ 1710 ~ 2170 MHz Tested at 290mm Square Ground Plane
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	Body: TPE Hinge: PA+ABS Holder: PA+ABS
Cable Type	RG-178
Connector Type	SMA Male
Connector Pull Test	>= 3 Kg
Connector Torque Test	100 ~ 300 g.cm
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C

2. Characteristics and Reliability Test

Test Items		Test Condition and Procedure	Requirements
C1	S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
M1	Vibration	MIL-STD-202G, 201A Amplitude: 0.03 inch (0.76mm); Freq: 10 to 55 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.<= 5%
M2	Random Drop	Height: 1.5 Meter; 3 directions; 1 time for each direction	1. No parts separated 2. Frequency Tol.<= 5%
M3	Solderability	MIL-STD-202G, 210F, cond. A Solder iron: 350±10°C; Duration: 5 seconds	1. Mounted on PCB 2. No Visual Damage
M4	Terminal-Pull Test	MIL-STD-202G, 211A, cond. A Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M5	Terminal-Torque Test	MIL-STD-202G, 211A, cond. E Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M6	Dimension	Inspection of dimension, color, material, package, surface process	Directive DUT specification
E1	Salt Spray	MIL-STD-202G, 101E, cond. B Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%; Time: 48 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E2	Humidity	MIL-STD-202G, 103B, cond. B Temp: 40°C; RH: >= 95%; Time: 48 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E3	Thermal Shock	1 Cycle: - 40°C (30 minutes) to + 80°C (30 minutes) Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E4	Life (High Temp.)	MIL-STD-202G, 108A, cond. A Temp: 85°C; Time: 96 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
R1	RoHS	With Reference to IEC 62321:2008 with flow chart	Directive RoHS 2002/95/EC
R2	PFOS	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC
R3	PFOA	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC

3. Antenna - S Parameter Test Data



4. Antenna - Radiation Pattern Test Data

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

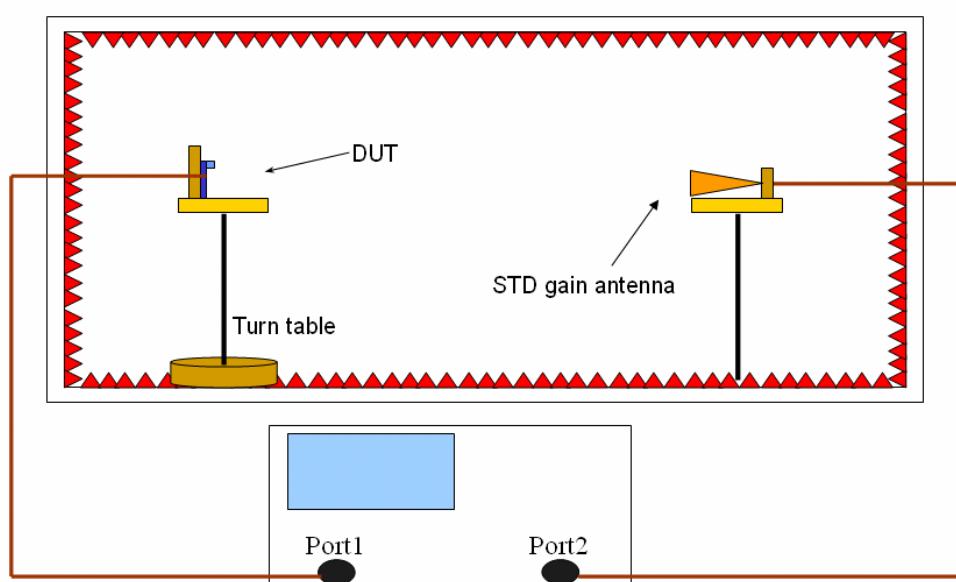
Quite Zone: 600mm @1 GHz

Isolation: >100dB @ 1 MHz ~ 10 GHz

Testing Equipment: Agilent 5071B

Received Antenna: 0.7 ~ 6.0 GHz for Gain Calibration

Double Ridged Horn Antenna



5. Mechanical Drawing

See attached files

6. Material Description and RoHS Test Report

See attached files

Model : AN8821F-57 Antenna

Remark : H-Plane // V-Pol

Tested by : CORTEC Antenna 3D Lab // Zhao Yao Rong

Location: Chamber

Date: 2009/9/1

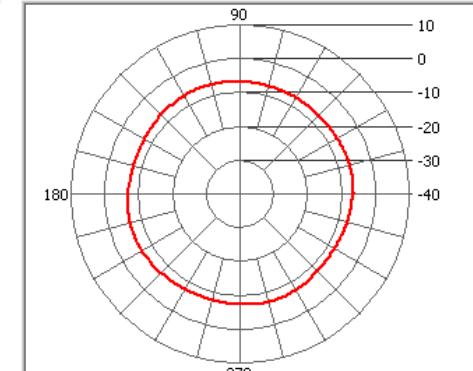
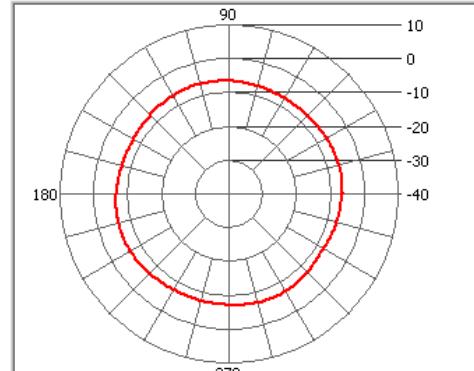
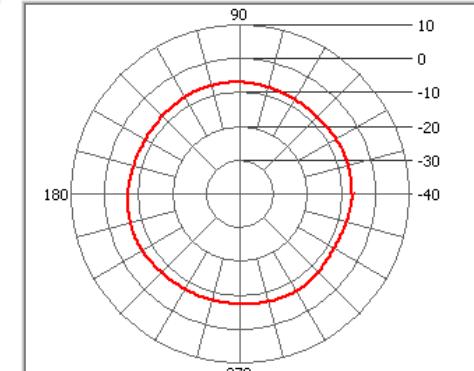
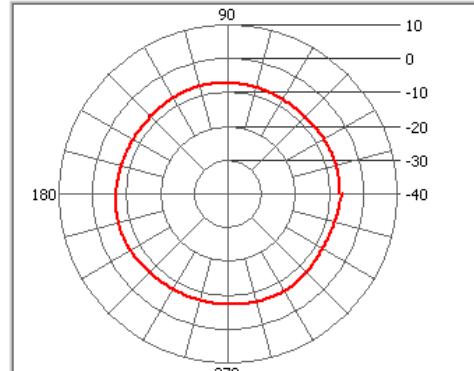
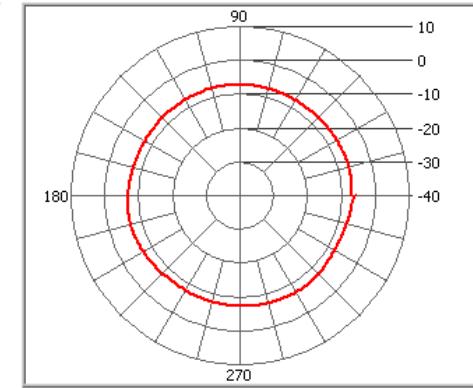
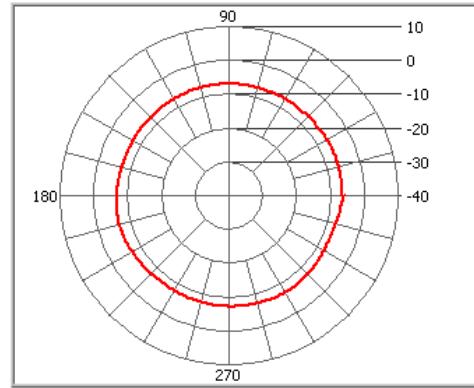
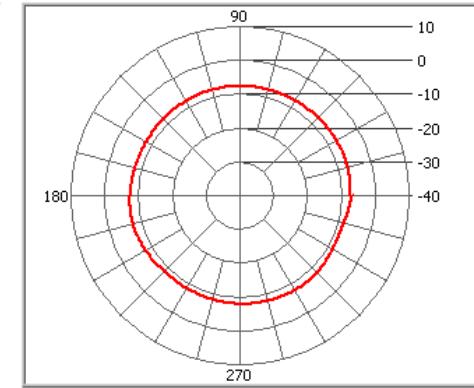
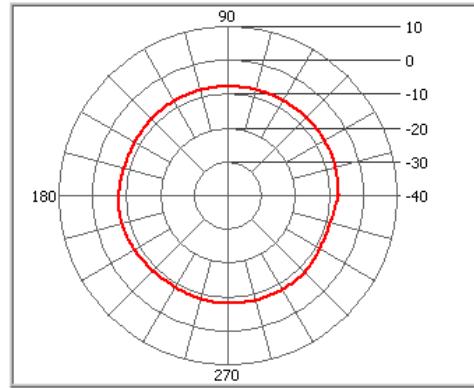
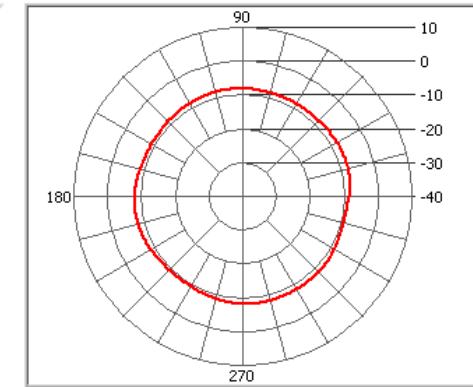
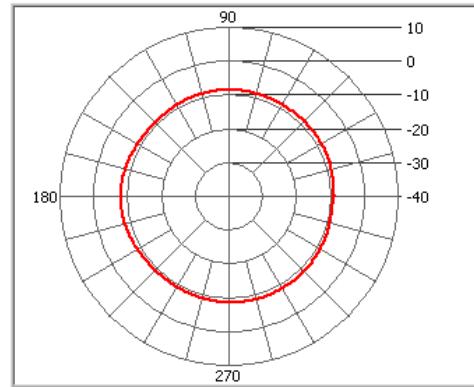
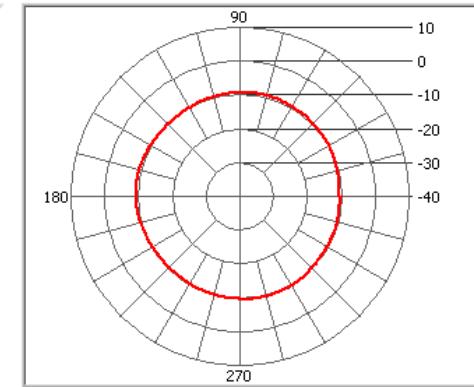
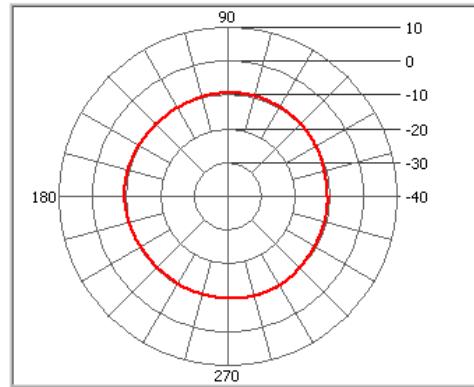
Time: 下午 07:15:20

Temperatuer (°C): 22.00

Humidity (%): 55.00

Approved by:

Freq. (MHz)	824	830	850	880	900	910	915	920	930	940	950	960
Peak Gain (dBi)	-9.3	-9.17	-8.01	-7.66	-6.93	-6.9	-6.09	-6.25	-6.31	-6.49	-6.16	-6.24
Peak Degree	69	76	184	17	17	359	360	359	359	205	202	7
AV Gain (dBi)	-9.85	-9.72	-8.67	-8.41	-7.9	-7.71	-7.02	-7.2	-7.2	-7.2	-6.87	-7.01



Model : AN8921F-57 Antenna

Remark : H-Plane // V-Pol

Tested by : CORTEC Antenna 3D Lab // Zhao Yao Rong

Location: Chamber

Date: 2009/9/1

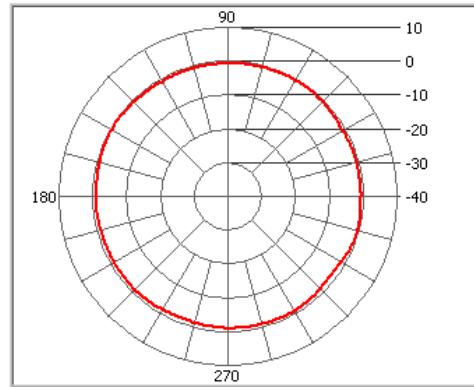
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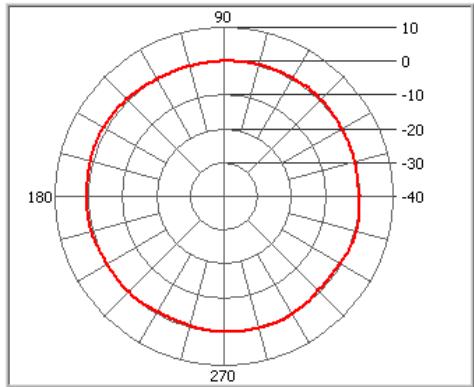
Humidity (%): 55.00

Approved by:

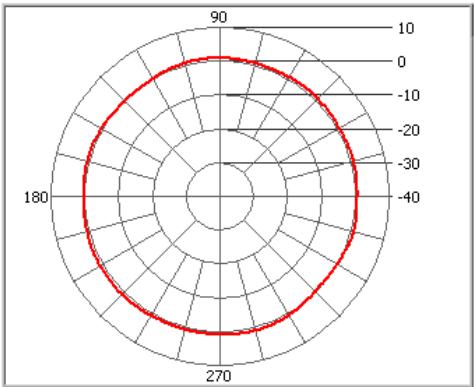
Freq. (MHz)	1710	1730	1770	1800	1850	1880	1900	1950	1990	2010	2050	2170
Peak Gain (dBi)	-0.21	1.12	1.08	1.03	-0.69	-2.94	-3.49	-5.72	-6.75	-7.07	-7.15	-8.63
Peak Degree	347	151	284	346	277	10	203	126	210	217	227	185
AV Gain (dBi)	-0.8	0.21	0.63	0.36	-1.63	-3.82	-4.45	-6.73	-8.39	-8.32	-8.27	-9.43



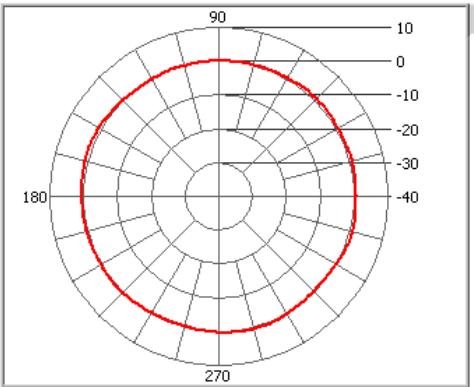
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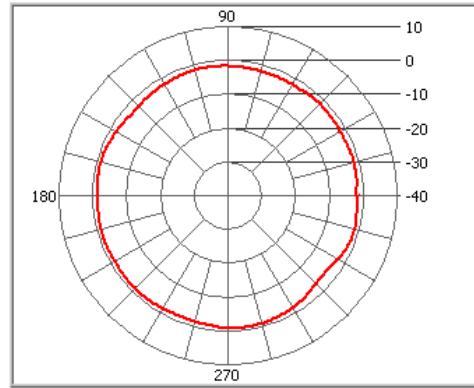
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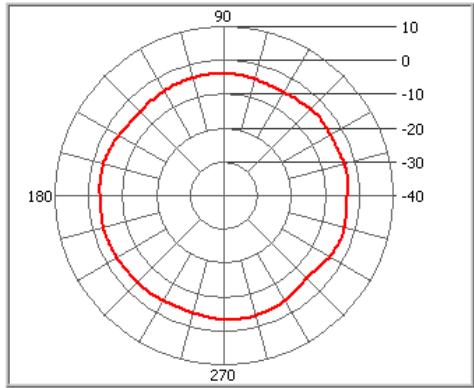
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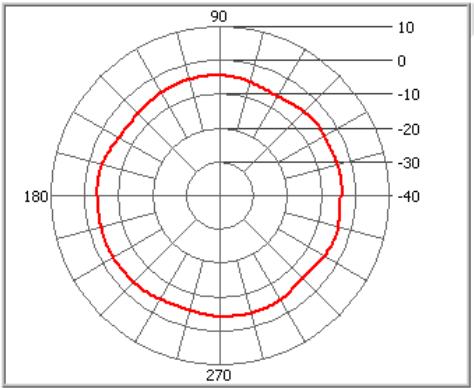
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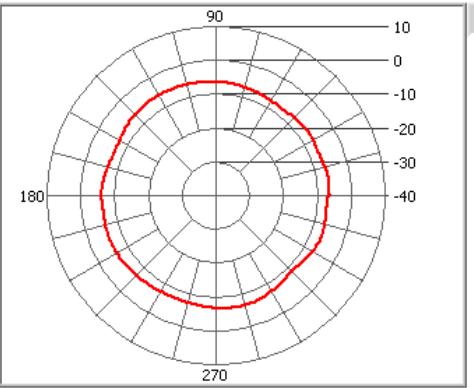
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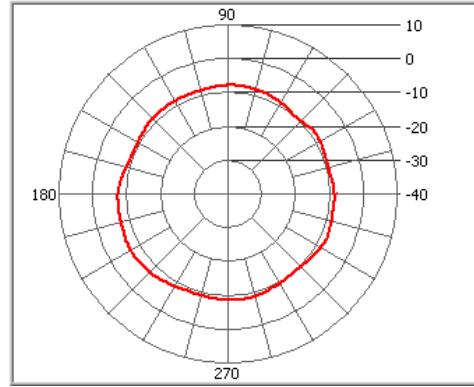
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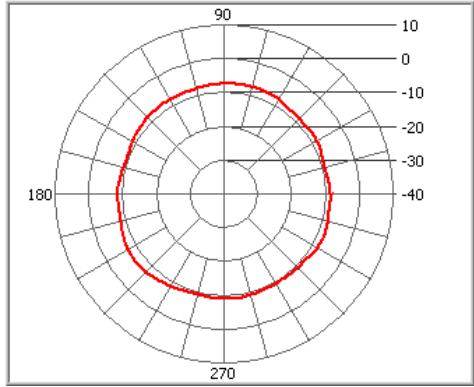
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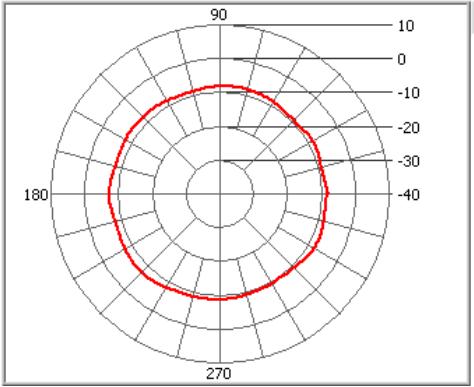
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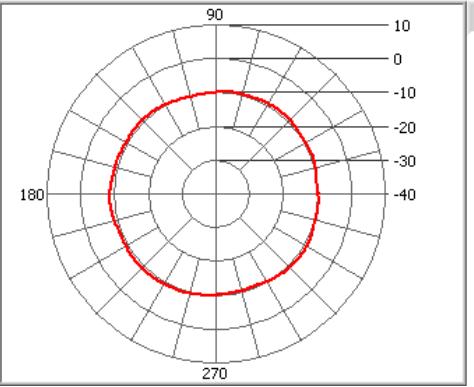
1990



2010



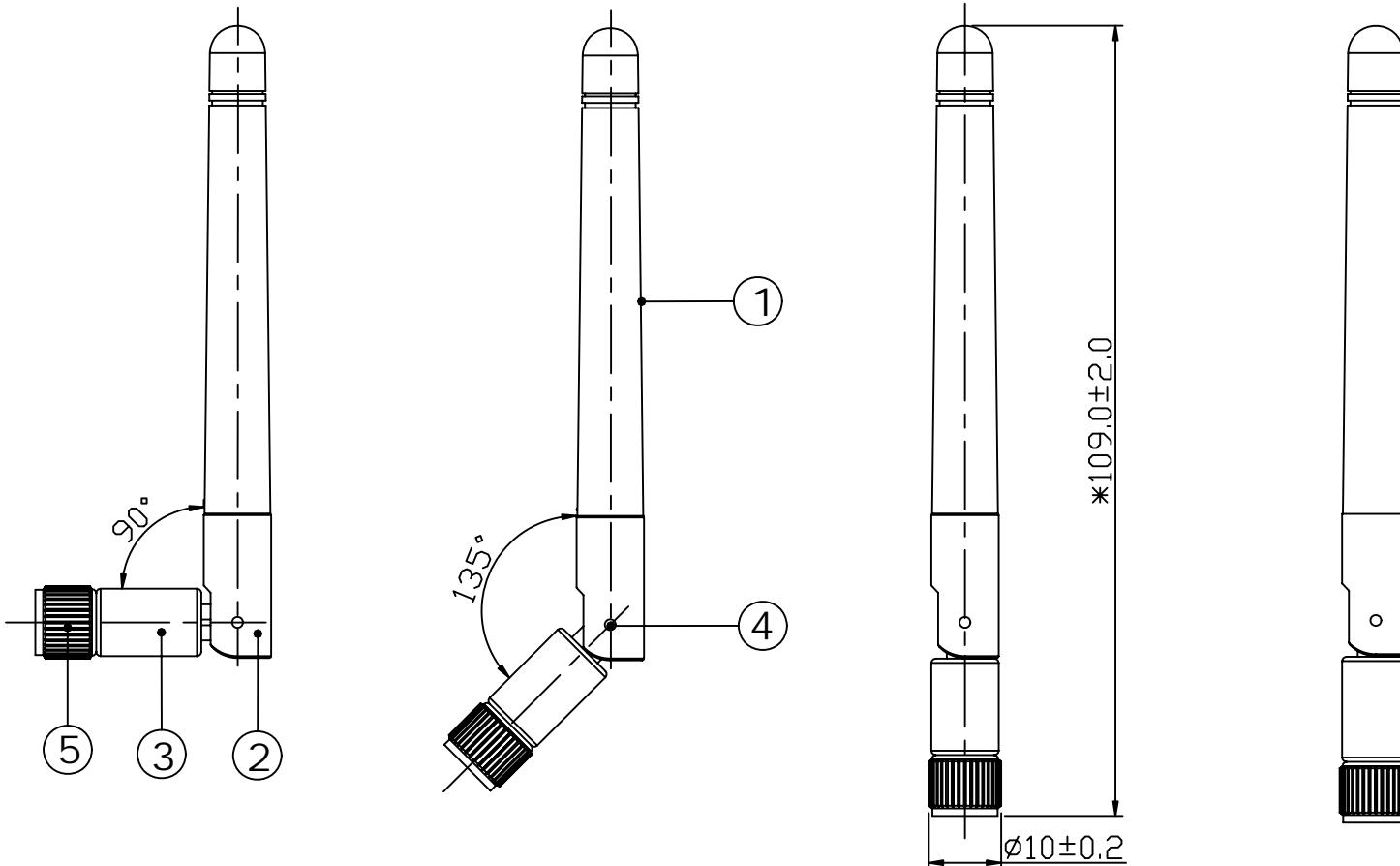
2050



2170

SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			

RoHS
Compatible



Noted :

1. Unmarked tolerance refer to standard tolerance please.
2. Taked*dimension is the important dimension.

5	R-SMA260-ZC8MNANT	SMA Male	Zn Alloy	Eletrodeposition	1
4	R-AN01-1213Z	Pin	Cu	Plated Zn Black	2
3	R-AN57-01	Body-3	PA+ABS	Black	1
2	R-AN57-02	Body-2	PA+ABS	Black	1
1	R-AN57-03	Body-1	TPE	Black	1
NO.	Part Number	Description	Material	Finish	Q'ty

Invax System Group. Cortec			Cortec Technology Inc.	
Http://www.invaxsystem.com E-mail:info@invax.com.tw			Tel :886-2-27885218 Fax:886-2-27831658	
PART NAME:GSM Antenna			DWG NAME: AN8921F-5701SM.dwg	
PART NO.: AN8921F-5701SM		DESIDNED BY		
APPROVED BY	CHECKED BY	DESIDNED BY		Tolerance
Grant 2009.08.27	liukui 2009.08.27	HU CHUNJIN 2009.08.27		X.X ±0.10
				X.XX ±0.05
				X° ±X°
			UNITS: mm	
			SCALE:	
			REVISION: A	

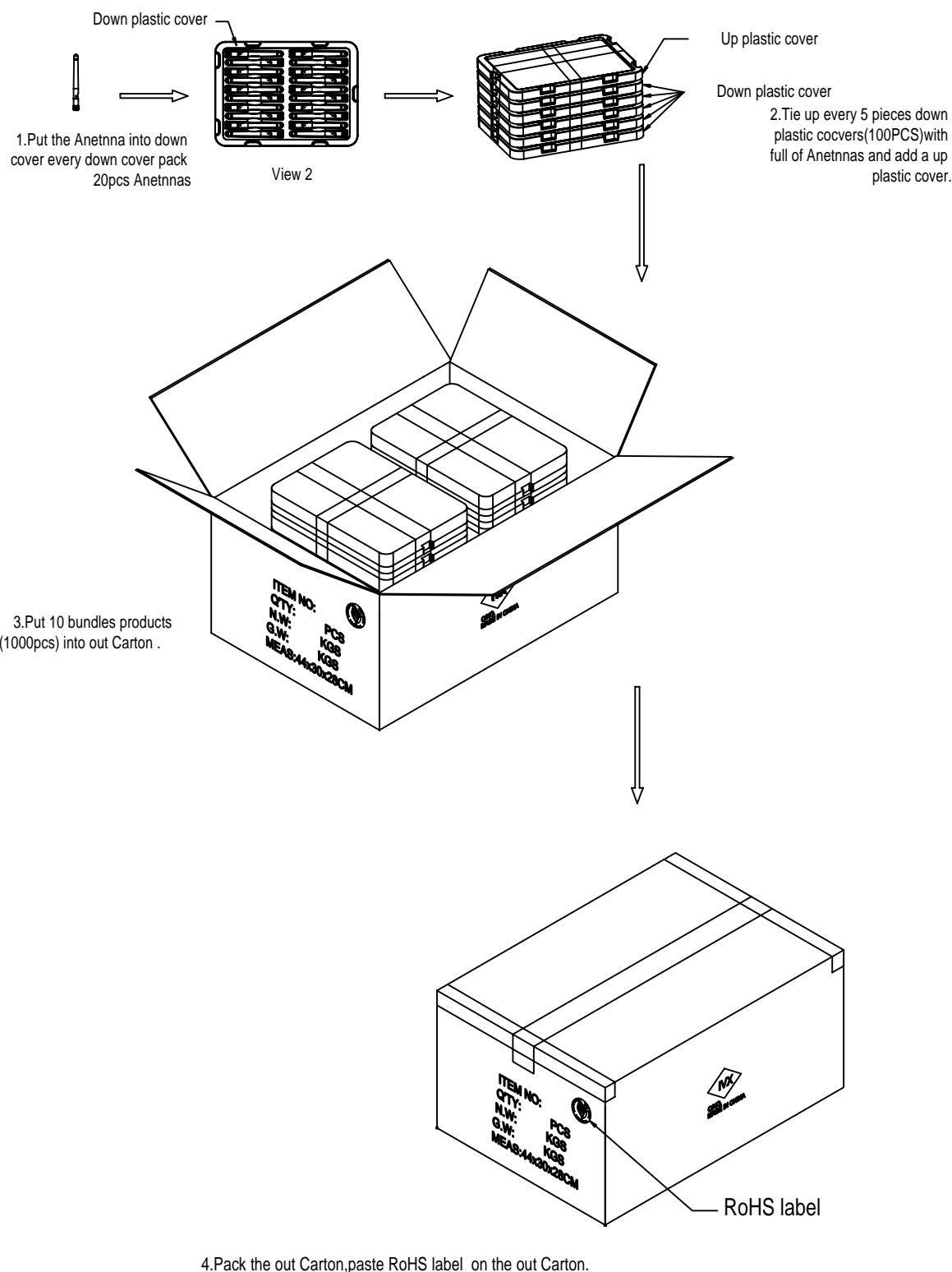
產品包裝規範**PACKING CRITERION**

Part Number : AN8921F-5701SM

Revision : A

Name: AP Antenna

Customer : ALL



SGS 台灣網站 → http://twap.sgs.com/sgsrsts/chn/cheres_tw.asp

SGS 大陸網站 → http://rstcs.sgs.com/chn/cheres_cn.asp

SGS 韓國網站 → http://rohs.kr.sgs.com/sgsrsts/en/cheres_en.asp

請輸入以下報告正確資料及檢查碼以便查核

1. 報告編號
2. 報告日期 (YYYY/MM/DD)
3. 產品名稱 (輸入前 10 個字不含空白)
4. 圖示檢查碼 (依指示畫面)



物料中RoHS對象物質含量調查表

康捷電子有限公司	
填表：	時麗
部門：	研發部
職務：	文員

物料名稱：AN8921F-5701SM

序號	物料型號	物料各構成名稱	各構成物料的材質	測試報告裡RoHS對應物質測試結果						檢測報告編號	測試日期	測試名稱	測試機構名稱
				Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs				
1	R-AN57-03	Body1	TPE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CE/2009/12273	2009.01.16	THERMOPLASTIC	臺北SGS
2	R-AN57-02 R-AN57-01	Body2 Body3	PA+ABS	N.D.	N.D.	N.D.	N.D.			F690501/LF-CTSAYAA09-08509C	2009.03.30	KC 226 NATURAL	臺北SGS
3	R-AN01-1213Z	Pin	銅	12	31199	N.D.	Negative			CANEC0805640301	2008.10.24	JisC3604BD	大陸SGS
4	R-SMA260-ZC8MNANT	SMA Male	鋅合金	11	26	N.D.	Negative	N.D.	N.D.	CANEC0900090808	2009.01.14	鋅合金鍍ZN-3#	大陸SGS
5	R-AN44335375S	Tube	銅	12	31199	N.D.	Negative			CANEC0805640301	2008.10.24	JisC3604BD	大陸SGS
6	R-RG-178U	Cable RG178	外皮 (FEP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	SH9139605/CHEM	2009.07.24	RF-COAXIAL CABLE	大陸SGS
7			PTFE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	SH9139605/CHEM	2009.07.24	RF-COAXIAL CABLE	大陸SGS
8			鍍銀銅絲	N.D.	N.D.	N.D.	Negative			SH9139605/CHEM	2009.07.24	RF-COAXIAL CABLE	大陸SGS
9			鍍銀銅線	N.D.	N.D.	N.D.	Negative			SH9139605/CHEM	2009.07.24	RF-COAXIAL CABLE	大陸SGS
10	R-ANS08-50-265	Spring	碳鋼線	N.D.	N.D.	N.D.	Negative			CANEC0900380202	2009.02.14	碳素彈簧鋼絲	大陸SGS

根據測試報告如實填寫鉛、鎘、汞、六價鉻、PBBs和PBDEs六項禁用物質的含量

包裝材料中鉛、鎘、汞、六價鉻總含量不超過100ppm，鎘的允許濃度為5ppm

TPE Datasheet

物性項目 Property	單位 Unit	ASTM 試驗法 Test Method	TPE
比重 Specific Gravity	---	D792	0.88
模具收縮率 Shrinkage	%	D955	0.8-2.5
斷裂拉伸強度 Tensile Strength	Kg/ cm ³	D638	3.1
扭曲強度 Flexural Strength	Kg/ cm ³	D790	---
衝擊強度缺口 23°C Impact Strength	Kg om/om	D256	---
硬度 Hardness	A Shore	---	13
熱變形溫度 0.45 MPa Heat Deflection Temp.	°C	D648	80
熔融指數 Melt Flow Index	G/ min ²	D1238	10
燃燒性 Flammability	---	UL94	HB
Testing Data from			
東莞市合春塑料有限公司 Tel:86-0769-2774772			
台灣大雅國際股份有限公司 Tel:886-02-27775232			

測試報告

號碼(No.): CE/2009/12273

日期(Date): 2009/01/16

頁數(Page): 1 of 6

Test Report

長春人造樹脂廠股份有限公司

CHANG CHUN PLASTICS CO., LTD.

(CHANG CHUN CHEMICAL (ZHANGZHOU) CO., LTD.)

台北市中山區松江路301號7樓

7TH FL., 301, SONG KIANG ROAD, TAIPEI, TAIWAN, R. O. C.



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

樣品名稱(Sample Description) : THERMOPLASTIC POLYESTER ELASTOMER, TPEE

樣品型號(Style/Item No.) : TPEE (1140LH, 1140XH, 1143LH, 1143XH, 1155LL, 1163LL, 1172LL, 1177LL)

收件日期(Sample Receiving Date) : 2009/01/12

測試期間(Testing Period) : 2009/01/12 TO 2009/01/16

測試需求(Test Requested) : 參照 RoHS 2002/95/EC 及其修定指令要求. (In accordance with the RoHS Directive 2002/95/EC, and its amendment directives).

測試方法(Test Method) : 參考 IEC 62321: 2008 方法檢測. (With reference to IEC 62321: 2008. Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products).

- (1) 用感應耦合電漿原子發射光譜儀檢測鎘含量. / Determination of Cadmium by ICP-AES.
- (2) 用感應耦合電漿原子發射光譜儀檢測鉛含量. / Determination of Lead by ICP-AES.
- (3) 用感應耦合電漿原子發射光譜儀檢測汞含量. / Determination of Mercury by ICP-AES.
- (4) 用UV-VIS檢測六價鉻含量. / Determination of Hexavalent Chromium by UV/Vis Spectrometry.
- (5) 以氣相層析儀/質譜儀檢測多溴聯苯和多溴聯苯醚含量. / Determination of PBB and PBDE by GC/MS.

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

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.

除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部分複製。

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測試報告 Test Report

號碼(No.): CE/2009/12273

日期(Date): 2009/01/16

頁數(Page): 2 of 6

長春人造樹脂廠股份有限公司

CHANG CHUN PLASTICS CO., LTD.

(CHANG CHUN CHEMICAL (ZHANGZHOU) CO., LTD.)

台北市中山區松江路301號7樓

7TH FL., 301, SONG KIANG ROAD, TAIPEI, TAIWAN, R. O. C.



測試結果(Test Results) 單位(Unit): mg/kg

測試項目 (Test Items)	測試方法 Method (Refer to)	結果 (Result)		方法偵測 極限值 (MDL)
		No.1		
鎘 / Cadmium (Cd)	(1)	n.d.	2	
鉛 / Lead (Pb)	(2)	n.d.	2	
汞 / Mercury (Hg)	(3)	n.d.	2	
六價鉻 / Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	2	
多溴聯苯總和 / Sum of PBBs		n.d.	-	
一溴聯苯 / Monobromobiphenyl		n.d.	5	
二溴聯苯 / Dibromobiphenyl		n.d.	5	
三溴聯苯 / Tribromobiphenyl		n.d.	5	
四溴聯苯 / Tetrabromobiphenyl		n.d.	5	
五溴聯苯 / Pentabromobiphenyl		n.d.	5	
六溴聯苯 / Hexabromobiphenyl		n.d.	5	
七溴聯苯 / Heptabromobiphenyl		n.d.	5	
八溴聯苯 / Octabromobiphenyl		n.d.	5	
九溴聯苯 / Nonabromobiphenyl		n.d.	5	
十溴聯苯 / Decabromobiphenyl		n.d.	5	
多溴聯苯醚總和 / Sum of PBDEs		n.d.	-	
一溴聯苯醚 / Monobromodiphenyl ether		n.d.	5	
二溴聯苯醚 / Dibromodiphenyl ether		n.d.	5	
三溴聯苯醚 / Tribromodiphenyl ether		n.d.	5	
四溴聯苯醚 / Tetrabromodiphenyl ether		n.d.	5	
五溴聯苯醚 / Pentabromodiphenyl ether		n.d.	5	
六溴聯苯醚 / Hexabromodiphenyl ether		n.d.	5	
七溴聯苯醚 / Heptabromodiphenyl ether		n.d.	5	
八溴聯苯醚 / Octabromodiphenyl ether		n.d.	5	
九溴聯苯醚 / Nonabromodiphenyl ether		n.d.	5	
十溴聯苯醚 / Decabromodiphenyl ether		n.d.	5	

(5)

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測試報告 Test Report

號碼(No.): CE/2009/12273

日期(Date): 2009/01/16

頁數(Page): 3 of 6

長春人造樹脂廠股份有限公司

CHANG CHUN PLASTICS CO., LTD.

(CHANG CHUN CHEMICAL (ZHANGZHOU) CO., LTD.)

台北市中山區松江路301號7樓

7TH FL., 301, SONG KIANG ROAD, TAIPEI, TAIWAN, R. O. C.

**測試部位描述 (TEST PART DESCRIPTION):**

NO.1 : 白色塑膠粒 (WHITE PLASTIC PELLETS)

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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測試報告

Test Report

號碼(No.): CE/2009/12273

日期(Date): 2009/01/16

頁數(Page): 4 of 6

長春人造樹脂廠股份有限公司

CHANG CHUN PLASTICS CO., LTD.

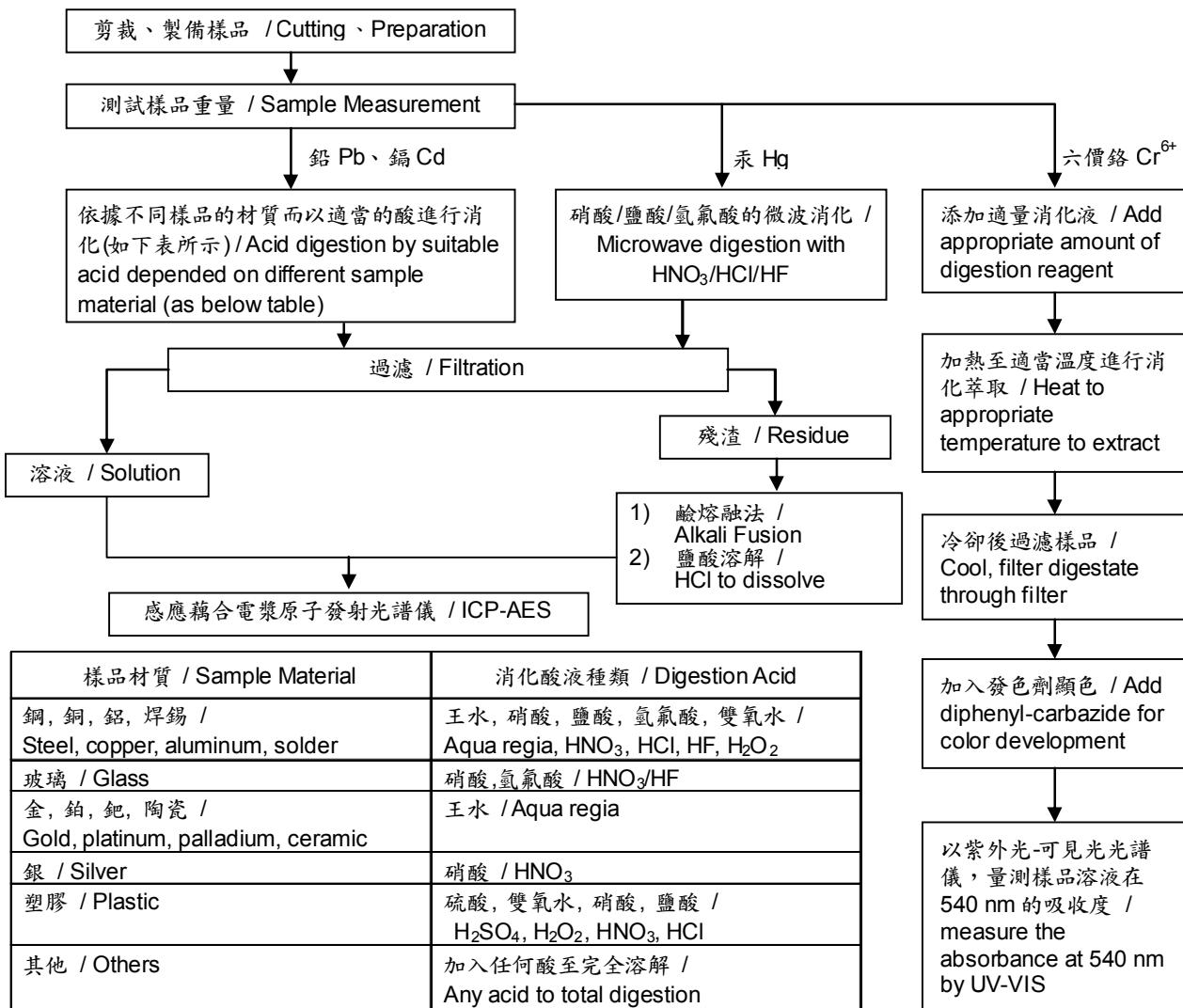
(CHANG CHUN CHEMICAL (ZHANGZHOU) CO., LTD.)

台北市中山區松江路301號7樓

7TH FL., 301, SONG KIANG ROAD, TAIPEI, 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^{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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測試報告 Test Report

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CHANG CHUN PLASTICS CO., LTD.

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號碼(No.): CE/2009/12273 日期(Date): 2009/01/16 頁數(Page): 5 of 6



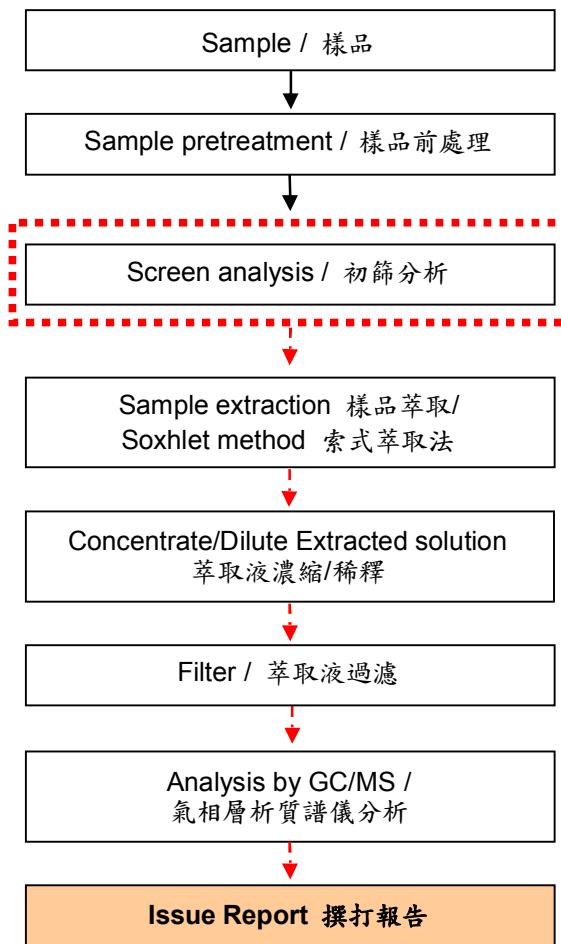
多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 1) 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 2) 測試負責人：陳新智 / Name of the person in charge of measurement: Shinjyh Chen

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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測試報告 Test Report

長春人造樹脂廠股份有限公司

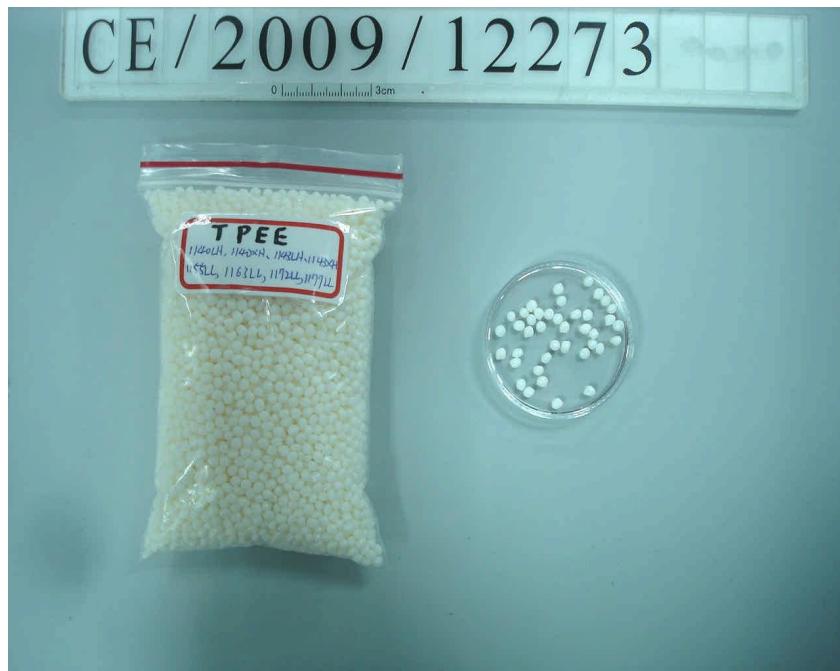
CHANG CHUN PLASTICS CO., LTD.

(CHANG CHUN CHEMICAL (ZHANGZHOU) CO., LTD.)

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7TH FL., 301, SONG KIANG ROAD, TAIPEI, TAIWAN, R. O. C.

日期(Date): 2009/01/16 頁數(Page): 6 of 6



** 報告結尾(End of Report) **

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RHODIA POLYAMIDE CO., LTD.
3 FL. KANGNAM BLDG. 1321-1
SEOCHO-DONG SEOCHO-KU
SEOUL 137-070
KOREA

TAIWAN YOSON CO., LTD
10F-1 NO.68 , INDUSTRIAL DIST.1RD
HSI TUN DIST. TAICHUNG TAIWAN ROC
411 TAICHUNG
TAIWAN

Manufacturing Plant
RHODIA POLYAMIDE ONSAN PLANT
WONSAN-RI, ONSAN-EUP, ULSAN-KUN
689-892, ULSAN-SI
SOUTH KOREA

Certificate of analysis

Date
15.04.2008
L/C order n /Date

Delivery item/Date
80950449 900001 / 14.04.2008
Order item/Date
623022 000010
Customer
75102
Contract number

Material: Our / Your reference

77474 TECHNYL ALLOY KC 226 NATURAL 25 KG BAG(S) /

The dispatched material conforms to agreed requirements

Batch 0810307 / Quantity 4,300 KG

Characteristic	Unit	Value	Limit Lower	Limit upper
Moisture content <i>ISO 15512</i>	%	0.036	0.000	0.200
Melt flow index <i>ISO 1133 (235 C; 2,16 kg)</i>	g/10mn	3.1	1.0	15.0

CHECKED BY: *[Signature]*

QUALITY MANAGER – OnSan AA/EP/POLY
(AA) Tel (82.52) 231-0800 / Fax 238-0015
(EP) Tel (82.52) 231-0900 / Fax 231-0993
(Poly) Tel (82. 52) 240-0700 / Fax 237-6525



Test Report No. F690501/LF-CTSAYAA09-08509C

Issued Date: March 30, 2009

Page 1 of 5

To: RHODIA POLYAMIDE CO., LTD.

1321-1
Seocho-dong
Seocho-gu
SEOUL
Korea

The following merchandise was submitted and identified by the client as:

Product Name	: KC 226 NATURAL
SGS File No.	: AYAA09-08509C
Received Date	: March 25, 2009
Test Performing Date	: March 26, 2009
Test Performed	: SGS Testing Korea tested the sample(s) selected by applicant with following results
Test Results	: For further details, please refer to following page(s)

SGS Testing Korea Co. Ltd.

Pluto Kim
Cindy Park
Jinee Song / Testing Person

Jeff Jang / Chemical Lab Mgr

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Test Report No. F690501/LF-CTSAYAA09-08509C

Issued Date: March 30, 2009

Page 2 of 5

Sample No. : AYAA09-08509C.001

Sample Description : KC 226 NATURAL

Item No./Part No. : N/A

Comments : Material is plastic.

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	With reference to IEC 62321:2008, ICP	0.5	N.D.
Lead (Pb)	mg/kg	With reference to IEC 62321:2008, ICP	5	N.D.
Mercury (Hg)	mg/kg	With reference to IEC 62321:2008, ICP	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	With reference to IEC 62321:2008, UV-VIS	1	N.D.

Halogen Contents

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.

- NOTE:
- (1) N.D. = Not detected.(<MDL)
 - (2) mg/kg = ppm
 - (3) MDL = Method Detection Limit
 - (4) - = No regulation
 - (5) ** = Qualitative analysis (No Unit)
 - (6) * = 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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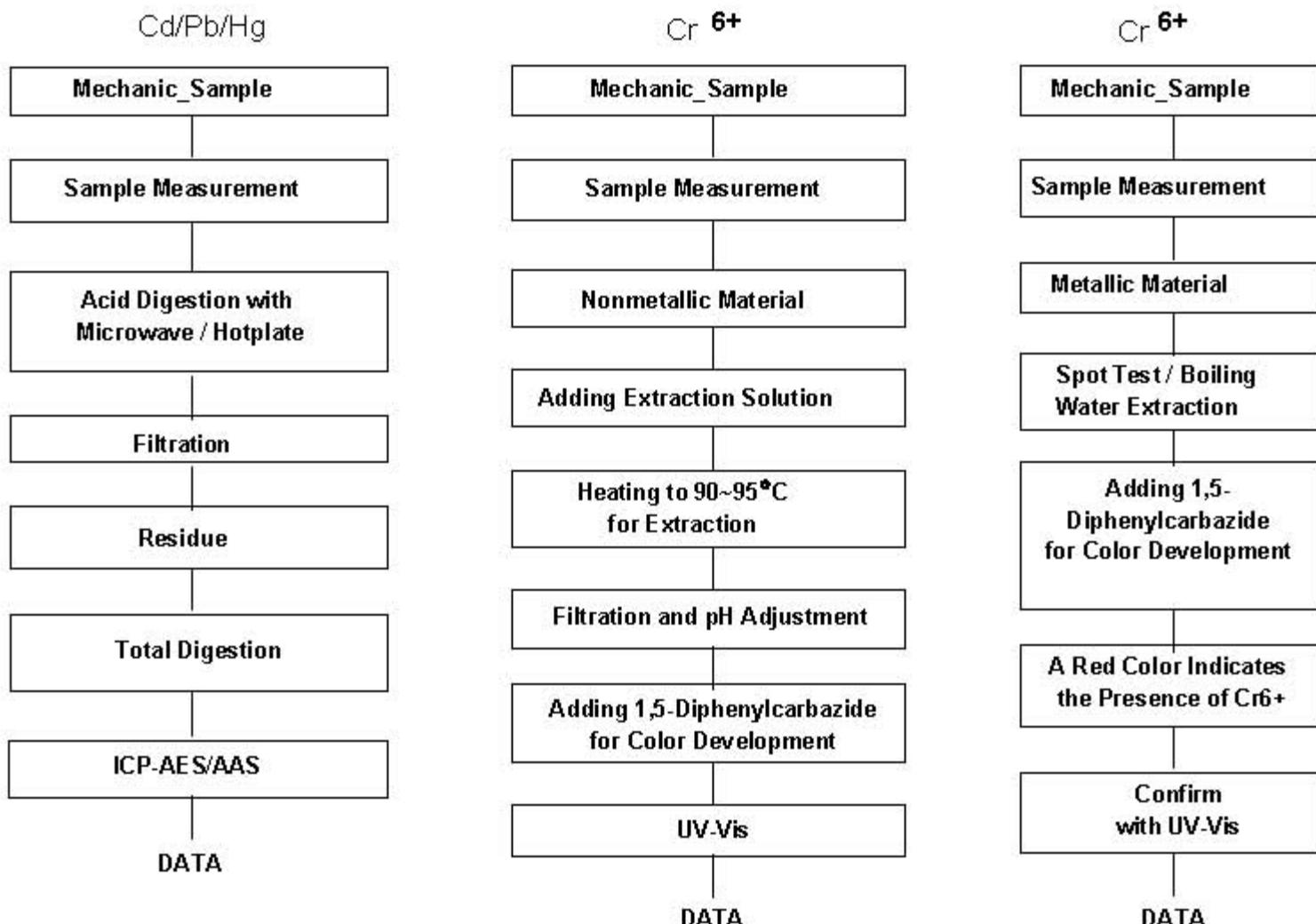
Picture of Sample as Received:



NOTE: (1) N.D. = Not detected.(<MDL)
 (2) mg/kg = ppm
 (3) MDL = Method Detection Limit
 (4) - = No regulation
 (5) ** = Qualitative analysis (No Unit)
 (6) * = Boiling-water-extraction:
 Negative = Absence of CrVI coating
 Positive = Presence of CrVI coating
 solution is equal or greater than

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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Testing Flow Chart for RoHS:Cd/Pb/Hg/Cr⁶⁺ Testing


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

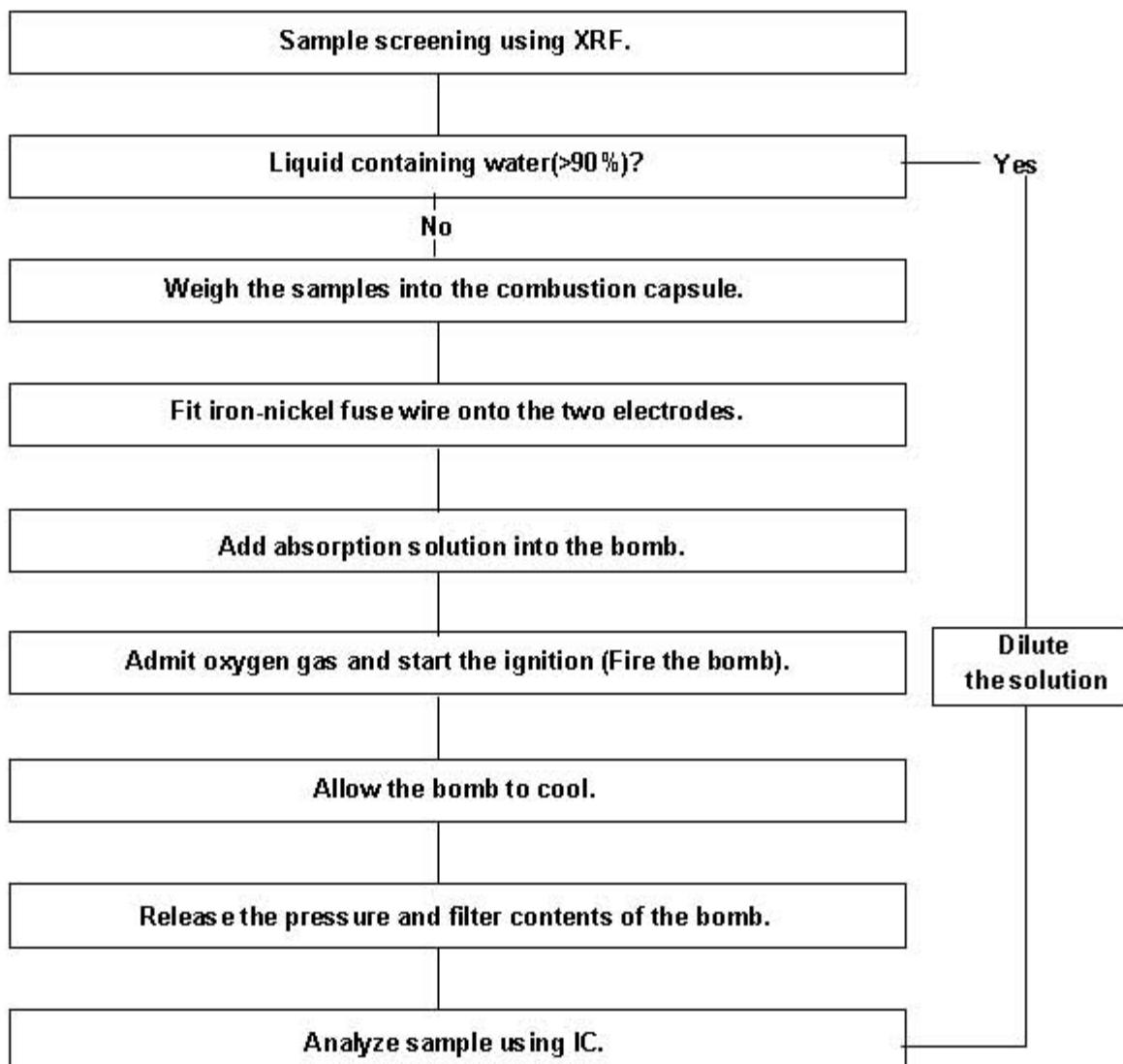
Operator Dami Yeom

Section Chief Jeff Jang

- NOTE:
- (1) N.D. = Not detected.(<MDL)
 - (2) mg/kg = ppm
 - (3) MDL = Method Detection Limit
 - (4) - = No regulation
 - (5) ** = Qualitative analysis (No Unit)
 - (6) * = Boiling-water-extraction:
Negative = Absence of Cr⁶⁺ coating
Positive = Presence of Cr⁶⁺ 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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Flow Chart for Halogen Test



*** End ***

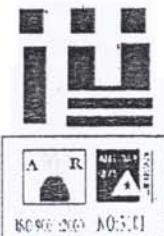
NOTE:

- (1) N.D. = Not detected.(<MDL)
- (2) mg/kg = ppm
- (3) MDL = Method Detection Limit
- (4) - = No regulation
- (5) ** = Qualitative analysis (No Unit)
- (6) * = Boiling-water-extraction:
Negative = Absence of CrVI coal
Positive = Presence of CrVI coal
solution is equal or greater than

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SHIYANG (ZHING SHAN) METAL PRODUCTS CO.,LTD



世扬金属制品有限公司

TEST CERTIFICATE

材质证明书



CLIENT 客户	天诚						certificate no. 证明书号	070127-15		
name article 品名	Brass									
LOT NO.	SIZE(MM)	OUTW GT	DESIGNATION	Cu(%)	Pb(%)	Fe(%)	Fe+Sn(%)	Cd(%)	Zn(%)	REMARK
	STANDARD	(KG)	JISC3604	57~61	1.8~3.7	≤0.5	≤1.2	≤0.0075	REM	
7916	14.5 φ		JISC3604	58.92	2.986	0.446	0.971	0.0042	REM	

兹证明本表所列产品,均依材料规格制造及试验,并符合规格之要求。

WE HEREBY CERTIFY THAT MATERIAL DESCRIBED JERE IN MAS BEEN MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENT OF THE ABOVE MATERIAL SPECIFICATION.

MANAGER: 曾敦義

PABLE: 李玉奎

DATE:2007/02/27

THE THREE INDUSTRIAL AREA NAN LANG TOWN ZHONG SHAN CITY
中国广东省中山市南朗镇第三工业区

TEL:0760-5214770 FAX:0760-5214769
E-Mail:sales@shiyangmetal.com

Test Report

No. CANEC0805640301

Date: 24 Oct 2008

Page 1 of 4

ZHONG SHAN SHI YANG METAL PRODUCT CO.,LTD
THE THIRD INDUSTRIAL AREA NANLANG TOWN ZHONG SHAN CITY GUANGDONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as :
Jis C3604 BD COPPER

SGS Job No. : 11354821 - SZ
Client Reference Information : LOT NO 1931
Date of Sample Received : 04 Sep 2008
Testing Period : 04 Sep 2008 - 10 Sep 2008

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.

Huang Fang, Sunny
Sr. Engineer

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SGS-CSTC Standards Technical Services Co., Ltd
TESTING SERVICES • CHEMICAL LABORATORY

198 Kezhu Road, Sciencetech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
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 www.cn.sgs.com
t (86-20)82155555 f (86-20)82075113 e sgs.china@sgs.com

Test Report

No. CANEC0805640301

Date: 24 Oct 2008

Page 2 of 4

Test Results:

ID for specimen 1 : CAN08-056403.001
Description for specimen 1 : Brassy metal rod

Heavy Metal(s)

Test Item(s)	Unit	Test Method (Reference)	Result	MDL
Cadmium (Cd)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	12	2
Lead (Pb)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	31199	2
Mercury (Hg)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	N.D.	2
Hexavalent Chromium (CrVI) by boiling water extraction	-	IEC 62321/2nd CDV (111/95/CDV), UV-Vis	Negative	◊

Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit
4. ◊ = Spot-Test:

Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;

(The tested sample should be further verified by boiling-water-extraction method if the spot test result is negative or cannot be confirmed.)

Boiling-water-extraction:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.

5. "-" = Not regulated

Remark: Results & photo(s) of this report refer to test report CANEC0804900401.

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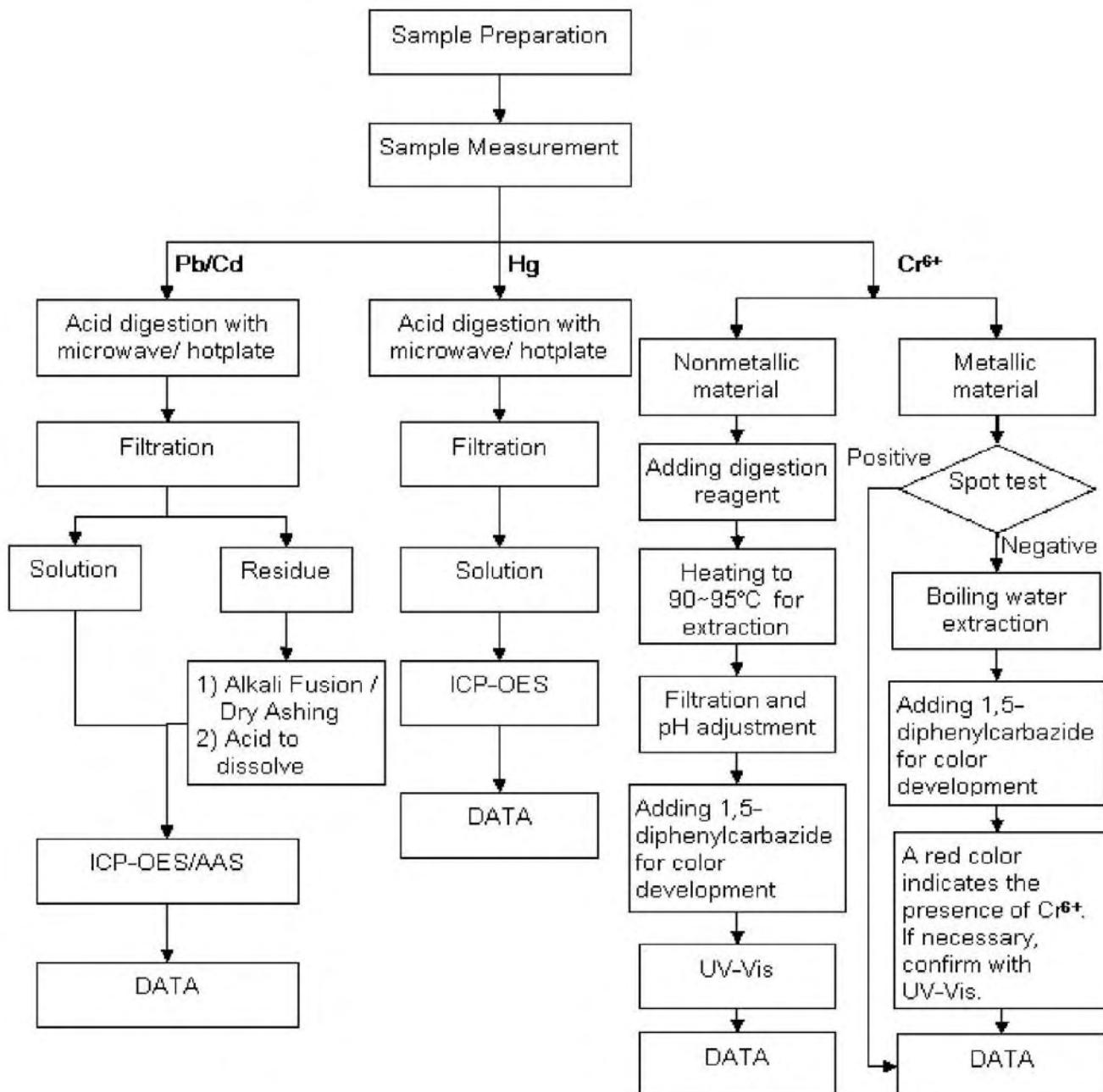
SGS-CAT Standards Technical Services Co., Ltd.
Guangzhou Scientific Testing Services Technical Laboratory

198 Kezhu Road, Scientech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
中国·广州·经济技术开发区科学城科珠路198号 邮编:510663

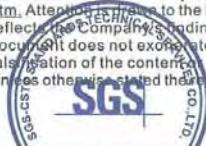
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t (86-20)82155555 f (86-20)82075113 sgs.china@sgs.com

ATTACHMENTS
Testing Flow Chart

- 1) Name of the person who made measurement: Bowen Chen
- 2) Name of the person in charge of measurement: Adams Yu



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Test Report

No. CANEC0805640301

Date: 24 Oct 2008

Page 4 of 4

Sample photo:



CAN08-056403.001

SGS authenticate the photo on original report only

*** End of Report ***

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Guangzhou SGS-CATC Standards Technical Services Co., Ltd. Testing Services Quality Control Laboratory
t (86-20)82155555 f (86-20)82075113 e sgs.china@sgs.com

SPECTRO**117941-04**

5/11/2008 12:15:51 PM



Method: Zn-50

Comment: Zamak 400/410/430

Type Corr. Concentration

5/11/2008 12:15:49 PM

Sample Name:

X2 B7

	Al %	Cd %	Cu %	Fe %	Mg %	Mn %	Ni %	Pb %
1	3.926	0.00095	0.351	0.0026	0.0337	< 0.00040	0.0062	0.0083

	Sn %	Si %	Cr %	Bi %	Zn %
1	0.0020	0.0037	0.00099	< 0.00040	95.7



测试报告

No. CANEC0900090808

日期: 2009年01月14日 第1页,共6页

肇庆市永业金属实业有限公司
中国广东省肇庆市高新区大旺工业园环市西路

以下测试之样品是由申请者所提供及确认:

锌合金锭ZN-3#

SGS工作编号 : 11535868 - GZ
SGS内部编号 : 8.8
样品接收日期 : 2009年01月08日
测试周期 : 2009年01月08日 - 2009年01月14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, 测试结果与欧盟RoHS指令2002/95/EC以及后续修正指令的要求**相符**。

通标标准技术服务有限公司
授权签名

Huang Fang, Sunny
Sr. Engineer

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Guangzhou Branch Testing Services Chemical Laboratory.

198 Kezhu Road, Scientech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
中国·广州·经济技术开发区科学城科珠路198号 邮编:510663

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测试报告

No. CANEC0900090808

日期: 2009年01月14日 第2页,共6页

测试结果:

样品1 ID : CAN09-000908.004
 样品1描述 : 银色金属

RoHS 指令 2002/95/EC

测试项目	单位	测试方法 (参考)	测试结果	MDL	限值
镉 (Cd)	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	11	2	100
铅 (Pb)	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	26	2	1000
汞 (Hg)	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	N.D.	2	1000
沸水萃取法测六价铬 (CrVI)	-	IEC 62321/2nd CDV (111/95/CDV), UV-Vis	Negative	◇	#
多溴联苯(PBBs)之和	毫克/千克	-	N.D.	-	1000
单溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
二溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
三溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
四溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
五溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
六溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
七溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
八溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
九溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
十溴联苯	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
多溴二苯醚(PBDEs)之和	毫克/千克	-	N.D.	-	1000
单溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
二溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
三溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
四溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
五溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
六溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
七溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
八溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
九溴二苯醚	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	
十溴二苯醚 ##	毫克/千克	IEC 62321/2nd CDV (111/95/CDV), GC-MS	N.D.	5	

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Guangzhou Branch Testing Services Chemical Laboratory

198 Kezhu Road, Scientech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
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

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测试报告

No. CANEC0900090808

日期: 2009年01月14日 第3页,共6页

注释:

1. 毫克/千克 = ppm
2. N.D. = 未检出 (< MDL)
3. MDL = 方法检测限
4. ## = 根据欧洲法庭2008年4月1日的决议, 2005/717/EC中关于聚合物样品中十溴二苯醚的豁免被否决。自2008年7月1日起, 十溴二苯醚将被包含于多溴二苯醚的总和计算之中。
5. ◇= 点测试:

Negative = 未检测到六价铬, Positive = 检测到;

(如果点测试结果为Negative或不能确认, 测试样品需进一步由沸水萃取法进行测试。)

沸水萃取法:

Negative = 未检测到六价铬

Positive = 检测到六价铬; 每50cm²表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02mg/kg。

6. # = Positive = 阳性

Negative = 阴性

7. "-" = 未规定

8. 多溴二苯醚 = 多溴联苯醚

9. 本测试报告内容是参照报告编号为CANEC0900090807的中文译本, 中英文版本如有歧异, 概以英文版为准。

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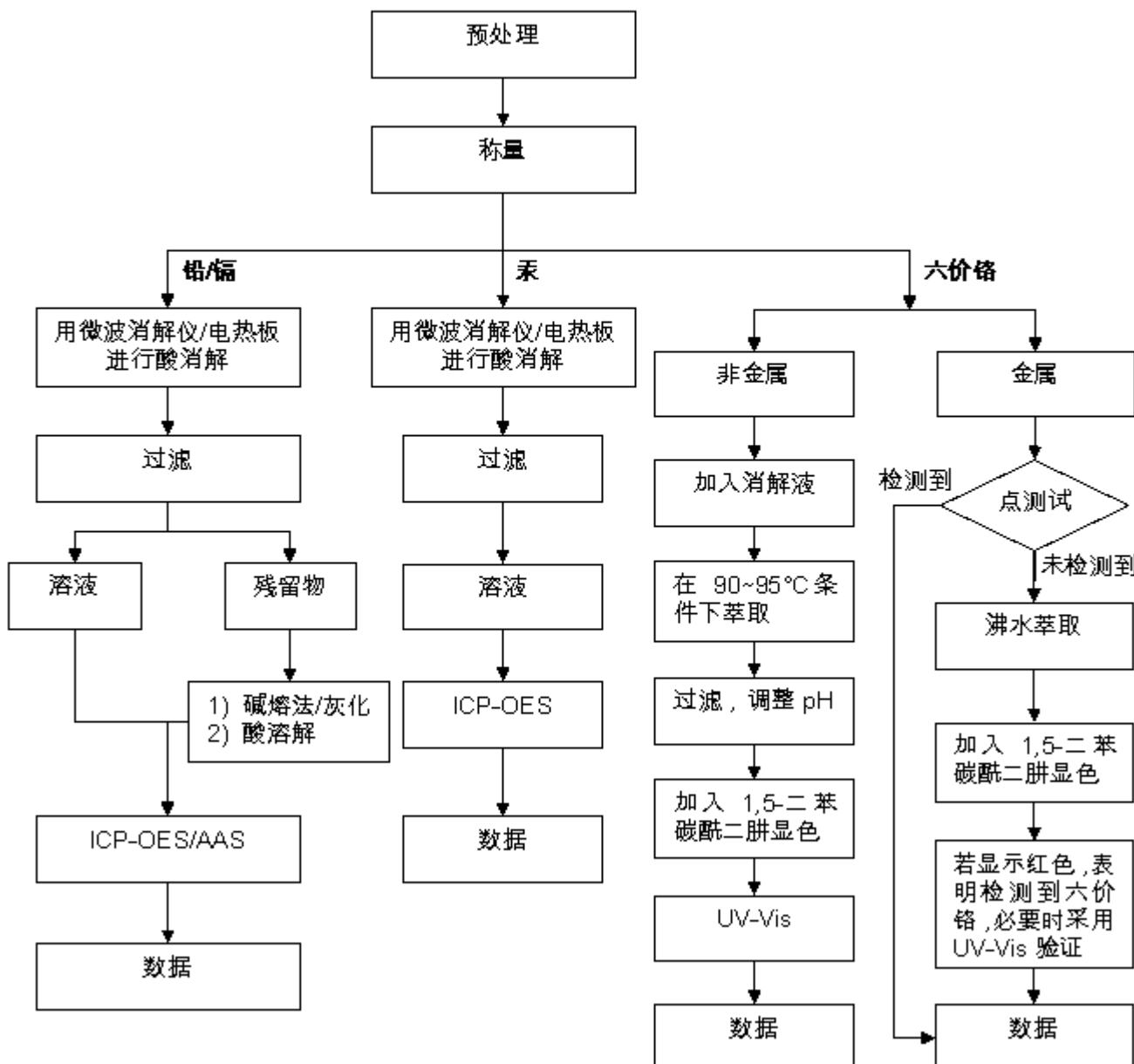
No. CANEC0900090808

日期: 2009年01月14日 第4页,共6页

附件

测试流程图

- 1) 分析人员: 陈美波
- 2) 项目负责人: 余奕东



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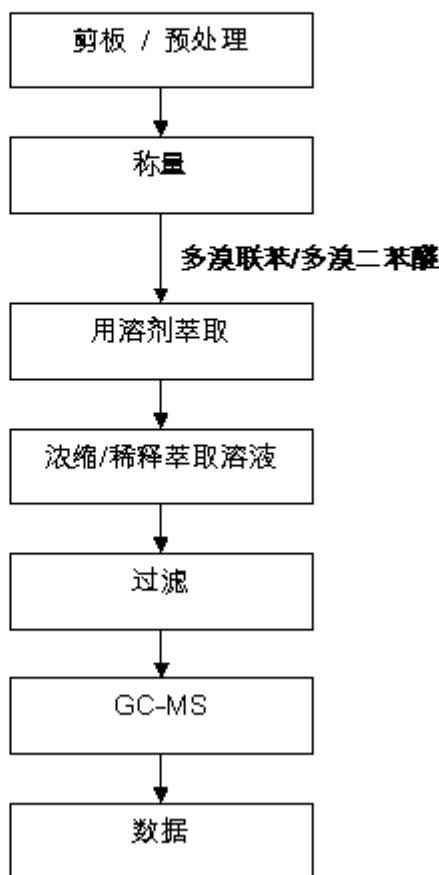
测试报告

No. CANEC0900090808

日期: 2009年01月14日 第5页,共6页

测试流程图

- 1) 分析人员: 唐丽娜
- 2) 项目负责人: 赵瑞娜



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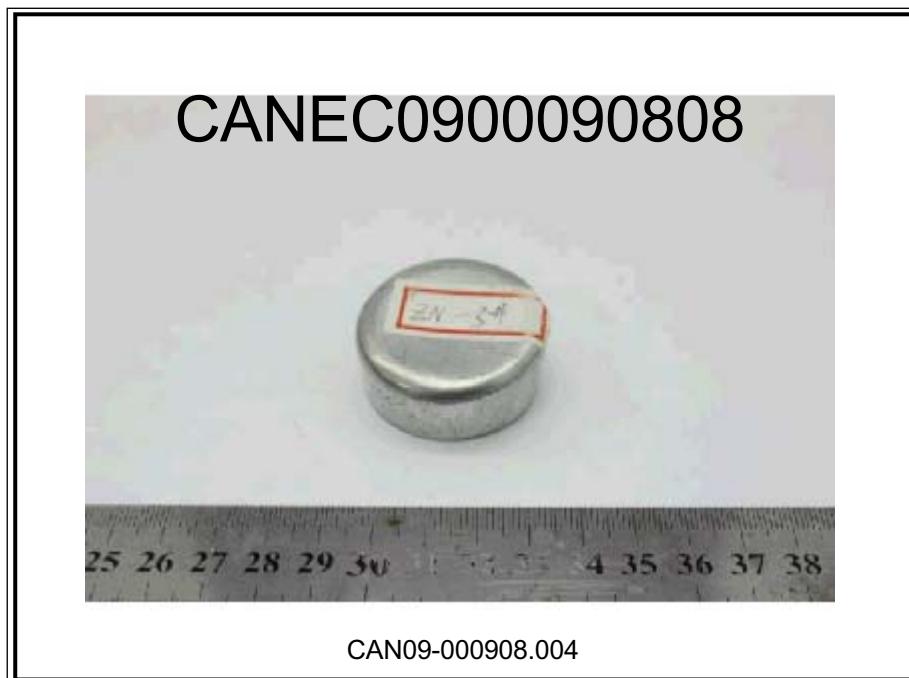
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测试报告

No. CANEC0900090808

日期: 2009年01月14日 第6页,共6页

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t (86-20)82155555 f (86-20)82075113 www.cn.sgs.com
t (86-20)82155555 f (86-20)82075113 sgs.china@sgs.com

无锡源达电工材料有限公司

WUXI YUANDA ELECTRICAL MATERIAL CO., LTD.

中国江苏省江阴市青阳镇南陈村 邮编 214401

Nachen, Qingyang Town, Jiangyin City 214400, Jiangsu, China

1. 适用范围:

Scope

本规格书制定了 50Ω FEP 绝缘射频电缆 YD178 系列的结构和电气特性。

This specification covers the construction and the electrical properties of YD178 series of 50Ω FEP Insulation Coaxial Cable.

2. 结构/Construction:

单位/Unit:mm

项目/Item		详细资料/Details
导体/Conductor	材料/Material	镀银铜线 /Silver-coated Copper Wire
	构成(根/mm) Composition (No. /mm)	7/0.102
	标称直径/Nom. O.D (mm)	0.306±0.03
绝缘层 /Insulation	材料/Material	聚全氟乙丙烯 (自然色) /FEP(Natural)/聚四氟乙烯/PTFE
	标称绝缘厚度/Nom. Thick (mm)	0.275
	标称外径/Nom. O.D (mm)	0.86±0.03
屏蔽层/Shield	材料/Material	镀银铜线/ Silver-coated annealed copper wire
	构成/Composition	0.10 单线编织/Single Braid of 0.10
护套/Jacket	材料/Material	聚全氟乙丙烯(*颜色) /FEP(*color)
	标称护套厚度/Nom. Thick (mm)	0.25
	标称外径/Nom. O.D (mm)	1.80±0.08
	颜色/Color	按与客户确认的颜色/According to corresponding have approved by the suppliers and customers

3. 电气特性(20℃时)/Electrical Properties (at 20°C)

项目/Item	单位/Unit	详细资料/Details	
导体电阻/Conductor Resistance	Ω/km	Max. 320	
绝缘电阻/Insulation Resistance	$M\Omega \cdot \text{km}$	Min. 500	
耐压强度/Dielectric Strength	V(AC)/min	1000	
静电容/Capacitance	pF/m	105 (1kHz)	
特性阻抗 /Characteristic Impedance	Ω	50±2.0	
衰减/Attenuation	dB/m	1GHz	1.70
		2GHz	2.42

无锡源达电工材料有限公司

WUXI YUANDA ELECTRICAL MATERIAL CO., LTD.

中国江苏省江阴市青阳镇南陈村 邮编 214401

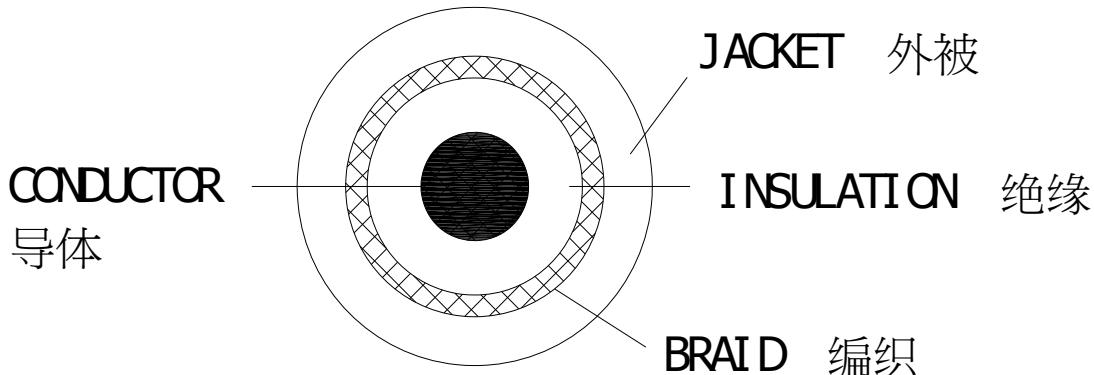
Nachen, Qingyang Town, Jiangyin City 214400, Jiangsu, China

		3GHz	3.08
		4GHz	3.63
		5GHz	4.15
		6GHz	4.80
驻波比/Standing wave (0~6GHz)	/	≤ 1.35	

4. 包装 Packing

标准单位包装长度为 400 米/盘, 每盘最多允许 3 个接头, 接头最短长度 20 米, 在搬运过程中不能损坏包装.

Standard unit length of finished cable shall be 400m on reel, frequency of joint max. 3/reel, the mini length is 20m. The finished cable shall be packed not be damaged during transportation



本产品有时不适合车载用途的情况也有, 所以使用前请先和本公司业务部门进行商谈.

This product is not suitable for automobile application in some cases. Please contact with our sales department before you use this product.

规格书完

End of specification

Test Report

No. SH9139605/CHEM

Date: Jul. 24, 2009

Page 1 of 11

WUXI YUANDA ELECTRICAL MATERIAL CO., LTD
QINGYANG TOWN NANCHEN VILLAGE, JIANGYIN, JIANGSU

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

Sample Name : RF-COAXIAL CABLE
SGS Ref No. : SUZ11962574-3
Part No : RF113 (BROWN)
Sample May Cover : RF081, RF132, RF137, RG178, RG179, RG180, RG187, RG188, RG195, RG196, RG302, RG303, RG316, RG142, RG400

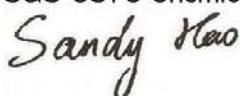
Sample Receiving Date : Jul.17, 2009
Testing Period : Jul.17 – 18, 2009

Test Requested : (1) In accordance with the RoHS Directive 2002/95/EC, and its amendment directives
(2) To determine the Hexabromocyclododecane (HBCDD) content of the submitted samples.
(3) To determine the PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid) content of the submitted samples.
(4) To determine the Halogen- Fluorine, Chlorine, Bromine, Iodine Content in the submitted sample.
(5) To determine the TBBP-A Content in the submitted sample.

Test Method /Test Results: Please refer to next pages

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

Signed for and on behalf of
SGS-CSTC Chemical Laboratory



Sandy Hao
Lab Manager

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SGS-CSTC Standards Technical Services Co., Ltd.
Shanghai Branch Testing Services Chemical Laboratory

3rd Building, No.889, Yishan Road, Shanghai, China

中国·上海·宜山路889号3号楼

200233

邮编: 200233

IE&E:(86-21) 61402553 IE&E:(86-21) 64953679

HL:(86-21) 61402594 HL:(86-21) 54500353

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e: sgs.china@sgs.com

Test Report

No. SH9139605/CHEM

Date: Jul. 24, 2009

Page 2 of 11

- Test Method : (1) With reference to IEC 62321:2008
 (1-1) Determination of Cadmium by ICP.
 (1-2) Determination of Lead by ICP.
 (1-3) Determination of Mercury by ICP.
 (1-4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method.
 (1-5) Determination of PBBs and PBDEs by GC/MS.
 (2) With reference to EPA 3550C: 2007.
 Analysis was performed by Gas chromatograph / Mass Spectrometer (GC-MS).
 (3) With reference to EPA 3550C: 2007.
 Analysis was performed by High Performance Liquid Chromatograph-Mass Spectrometer (HPLC-MS).
 (4) With reference to EN 14582: 2007.
 (4-1) Determination of Fluorine by Ion Chromatograph (IC) method.
 (4-2) Determination of Chlorine by Ion Chromatograph (IC) method.
 (4-3) Determination of Bromine by Ion Chromatograph (IC) method.
 (4-4) Determination of Iodine by Ion Chromatograph (IC) method.
 (5) With reference to EPA 3550C: 2007. Analysis was performed by Gas Chromatograph / Mass Spectrometer (GC/MS).

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

(1) Cadmium, Lead, Mercury, Hexavalent Chromium, PBBs(Polybrominated biphenyls) and PBDEs(PBDEs)(Polybrominated biphenyl ethers) Content

Test Item(s):	Method (refer to)	1*	2*	3*	MDL	RoHS Limit
Cadmium(Cd)	(1-1)	ND	ND	ND	2	100
Lead (Pb)	(1-2)	ND	ND	ND	2	1000
Mercury (Hg)	(1-3)	ND	ND	ND	2	1000
Hexavalent Chromium (CrVI) by alkaline extraction	(1-4)	ND	---	ND	2	1000
Hexavalent Chromium (CrVI) by spot test / boiling-water extraction	(1-4)	---	Negative	---	#	-
Sum of PBBs	(1-5)	ND	---	ND	-	1000
Monobromobiphenyl		ND	---	ND	5	-
Dibromobiphenyl		ND	---	ND	5	-
Tribromobiphenyl		ND	---	ND	5	-
Tetrabromobiphenyl		ND	---	ND	5	-
Pentabromobiphenyl		ND	---	ND	5	-
Hexabromobiphenyl		ND	---	ND	5	-
Heptabromobiphenyl		ND	---	ND	5	-
Octabromobiphenyl		ND	---	ND	5	-
Nonabromobiphenyl		ND	---	ND	5	-
Decabromobiphenyl		ND	---	ND	5	-
Sum of PBDEs		ND	---	ND	-	1000
Monobromodiphenyl ether		ND	---	ND	5	-
Dibromodiphenyl ether		ND	---	ND	5	-
Tribromodiphenyl ether		ND	---	ND	5	-
Tetrabromodiphenyl ether		ND	---	ND	5	-

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Shanghai Branch Testing Services Co., Ltd.

3rd Building, No.889, Yishan Road, Shanghai, China

中国·上海·宜山路889号3号楼

200233

IE&E:(86-21) 61402553 FE&E:(86-21) 64953679

www.cn.sgs.com

邮编: 200233

HL:(86-21) 61402594

HL:(86-21) 54500353

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Test Report
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Pentabromodiphenyl ether		ND	---	ND	5	-
Hexabromodiphenyl ether		ND	---	ND	5	-
Heptabromodiphenyl ether		ND	---	ND	5	-
Octabromodiphenyl ether		ND	---	ND	5	-
Nonabromodiphenyl ether		ND	---	ND	5	-
Decabromodiphenyl ether ##		ND	---	ND	5	-

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

(2) Hexabromocyclododecane (HBCDD) content

<u>Test Item:</u>	<u>Method (refer to)</u>	<u>1*</u>	<u>3*</u>	<u>MDL</u>
Hexabromocyclododecane (HBCDD)	(2)	ND	ND	5

(3) PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid) content

<u>Test Items</u>	<u>Test method (refer to)</u>	<u>1*</u>	<u>3*</u>	<u>MDL</u>
Perfluorooctane Sulfonates (PFOS) PFOS – Acid	(3)	ND	ND	10
PFOS – Metal Salt PFOS – Amide				
Perfluorooctyl Acid (PFOA)			ND	10

Note : PFOS Reference Information: 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 1 μ g /m² of the coated material.

(4) Halogen Content

<u>Test Item(s):</u>	<u>Method (refer to)</u>	<u>1*</u>	<u>3*</u>	<u>MDL</u>
Fluorine(F)	(4-1)	>10%	>10%	50
Chlorine(Cl)	(4-2)	ND	ND	50
Bromine(Br)	(4-3)	ND	ND	50
Iodine(I)	(4-4)	ND	ND	50

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Shanghai Branch

3rd Building, No.889, Yishan Road, Shanghai, China

中国·上海·宜山路889号3号楼

200233

邮编: 200233

IE&E:(86-21) 61402553 FE&E:(86-21) 64953679

HL:(86-21) 61402594 HL:(86-21) 54500353

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(5) TBBP-A Content

Test Item(s):	Method (refer to)	1*	3*	MDL
TBBP-A	(5)	ND	ND	10

Test Part Description:

1. Brown electrical wire wire part
2. Silvery metal wire part
3. Transparent solid tube part
4. Silvery metal wire part

Note:

(1) mg/kg = ppm

(2) ND = Not Detected

(3) MDL = Method Detection Limit

(4) # = Spot-test:

Negative = Absence of CrVI coating; Positive = Presence of CrVI coating;

(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)

Boiling-water-extraction:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 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.

(5) ##=The exemption of DecaBDE in polymeric application according 2005/717/EC was overruled by the European Court of Justice by its decision of 01.04.2008. Subsequently DecaBDE is included in the sum of PBDE after 01.07.2008.

(6) “-” = Not Regulated

(7) “--” = Not Conducted

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

(9) *The test results 1 are taken from report SH9124454-1/CHEM-1, Date: 2009/07/07

*The test results 2 are taken from report SH9124450-1/CHEM-1, Date: 2009/07/07

*The test results 3 are taken from report SH9124450-1/CHEM-2, Date: 2009/07/07

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Shanghai Branch, China Chemical Laboratory

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中国·上海·宜山路889号3号楼

200233

邮编: 200233

IE&E:(86-21) 61402553

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Test Report

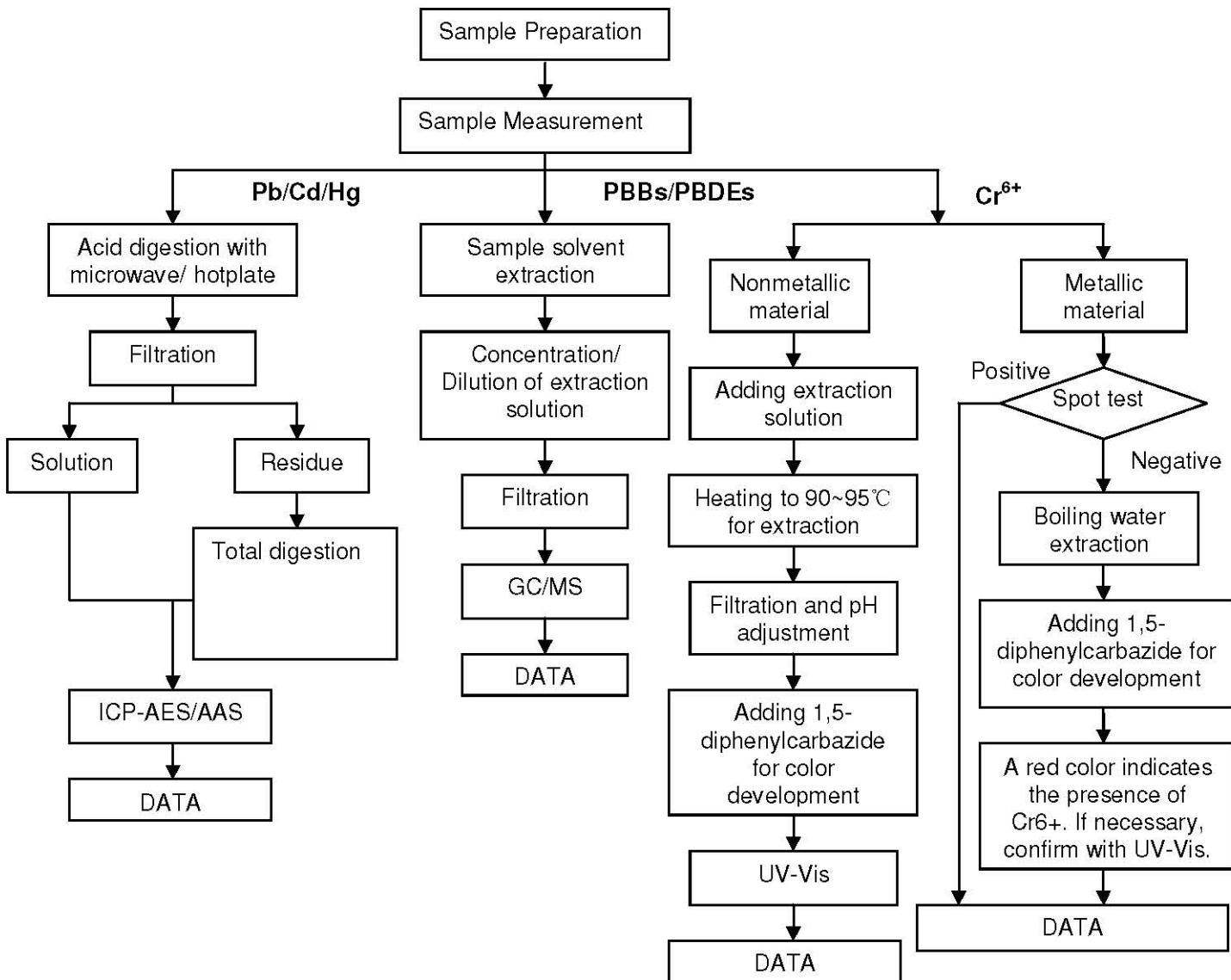
No. SH9139605/CHEM

Date: Jul. 24, 2009

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ATTACHMENTS

- 1) Name of the person who made measurement: Jeff Zhang/Chaven Lian/Frank Fang/Elim Lin
- 2) Name of the person in charge of measurement: Terry Wang/Phoebe Shen
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



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200233
邮编: 200233

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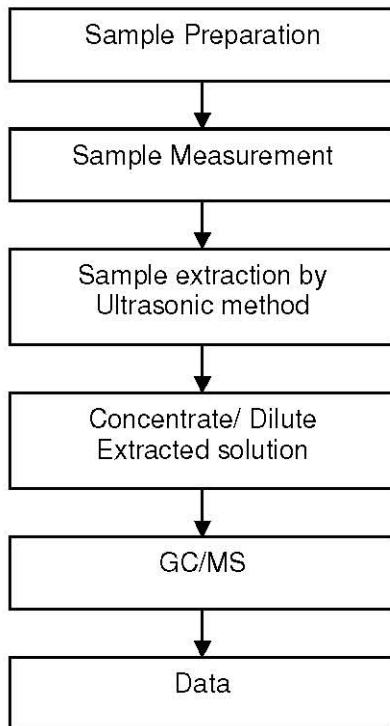
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HBCDD Measurement Flowchart for sample



Tested by : Elim Lin
Checked by : Phoebe Shen

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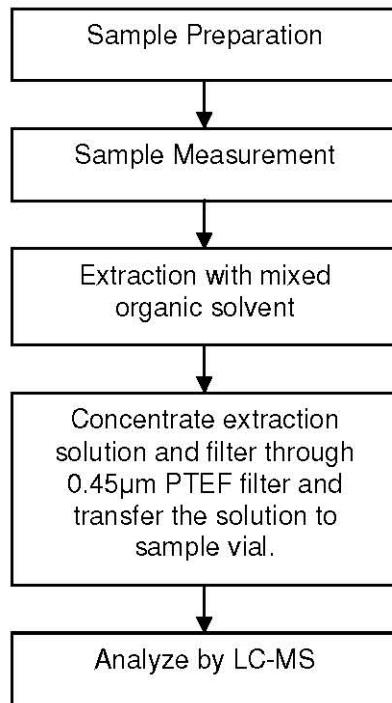
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PFOS/PFOA Measurement Flowchart for sample



Tested by : Judy Li
Checked by : Jenny Liu

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Standards Technical Services Co., Ltd.
Shanghai Branch

3rd Building, No.889, Yishan Road, Shanghai, China
中国·上海·宜山路889号3号楼

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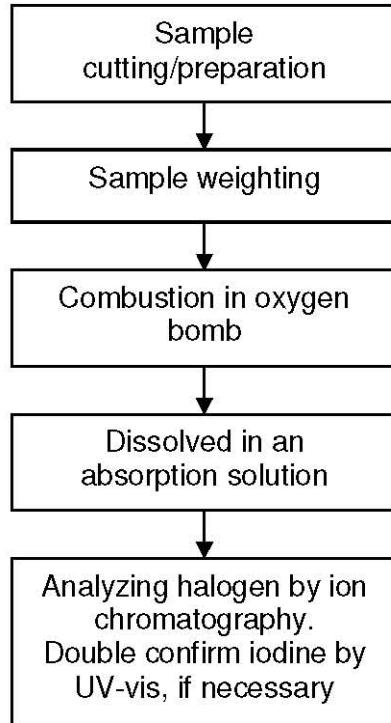
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Halogen Measurement Flowchart for sample



Tested by : Daisy Gong
Checked by : Alex Jiang

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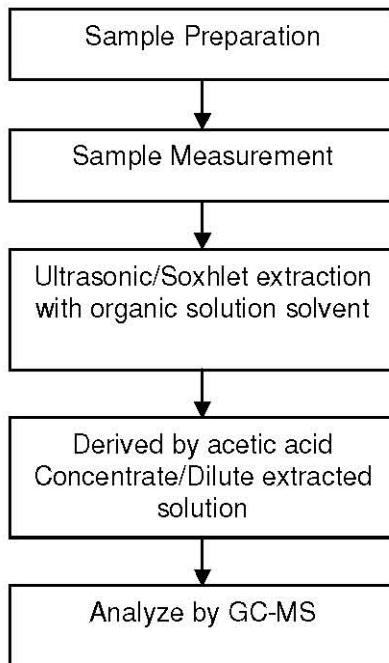
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TBBP-A Measurement Flowchart for sample



Tested by : Kery Shao
Checked by : Jenny Liu

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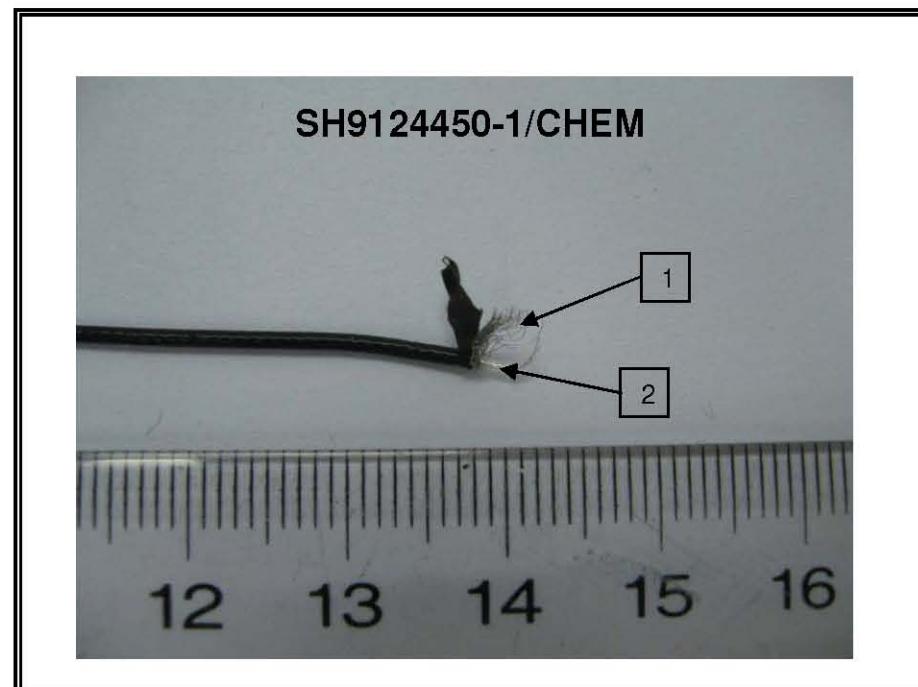
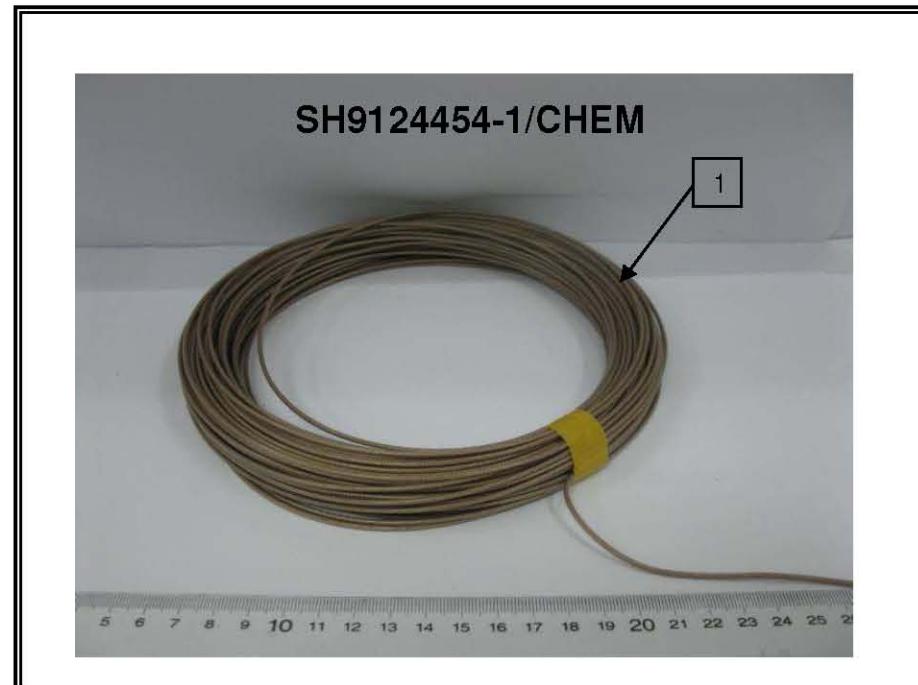
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Sample photo:



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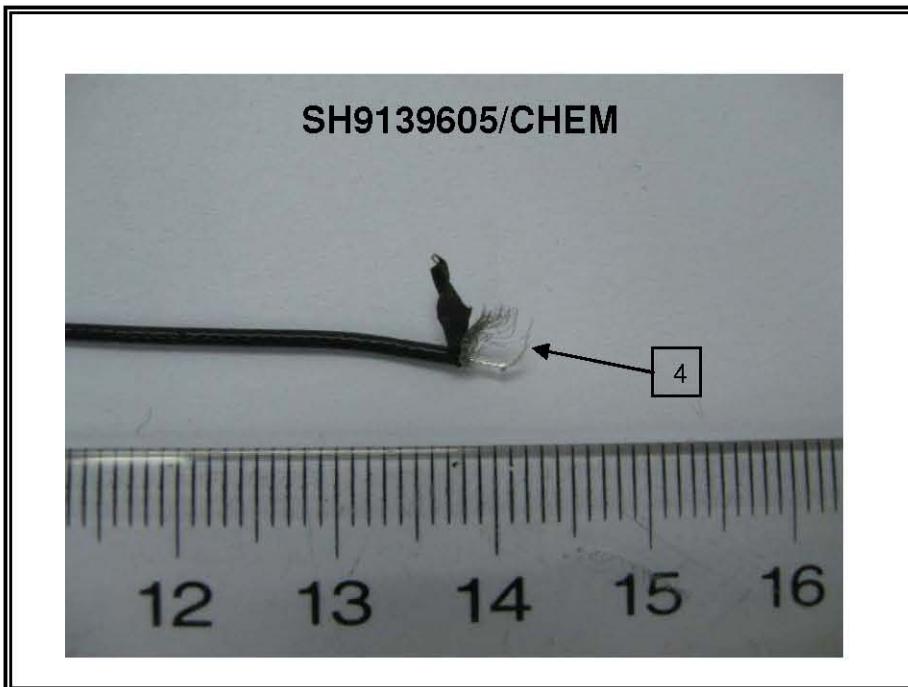


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SGS authenticate the photo on original report only

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测试报告

No. CANEC0900380202

日期: 2009年02月14日 第1页,共3页

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中国东莞市长安镇冲头兴业街A座11号

以下测试之样品是由申请者所提供及确认:

碳素弹簧钢丝

SGS工作编号	:	11595921 - SZ
样品接收日期	:	2009年02月10日
测试周期	:	2009年02月10日 - 2009年02月13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

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Huang Fang, Sunny
Sr. Engineer

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Guangzhou Branch TESTING SERVICES Chemical Laboratory

198 Kezhu Road, Scientech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
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 www.cn.sgs.com
t (86-20)82155555 f (86-20)82075113 e sgs.china@sgs.com

测试报告

No. CANEC0900380202

日期: 2009年02月14日 第2页,共3页

测试结果:

样品1 ID : CAN09-003802.001
样品1描述 : 银灰色金属线

重金属

测试项目	单位	测试方法(参考)	测试结果	MDL
镉(Cd)	毫克/千克	IEC 62321:2008, ICP-OES	N.D.	2
铅(Pb)	毫克/千克	IEC 62321:2008, ICP-OES	N.D.	2
汞(Hg)	毫克/千克	IEC 62321:2008, ICP-OES	N.D.	2
沸水萃取法测六价铬(CrVI)	-	IEC 62321:2008, UV-Vis	Negative	◇

注释:

1. 毫克/千克 = ppm
2. N.D.= 未检出(< MDL)
3. MDL = 方法检测限
4. ◇ = 点测试 :

Negative = 未检测到六价铬 , Positive = 检测到 ;

(如果点测试结果为Negative或不能确认 , 测试样品需进一步由沸水萃取法进行测试。)

沸水萃取法:

Negative = 未检测到六价铬

Positive = 检测到六价铬 ; 每50cm²表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02mg/kg。

由于未获知样品的存储条件和生产日期 , 样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。

5. " " = 未规定
6. 本测试报告内容是参照报告编号为CANEC0900380201的中文译本 , 中英文版本如有歧异 , 概以英文版为准。

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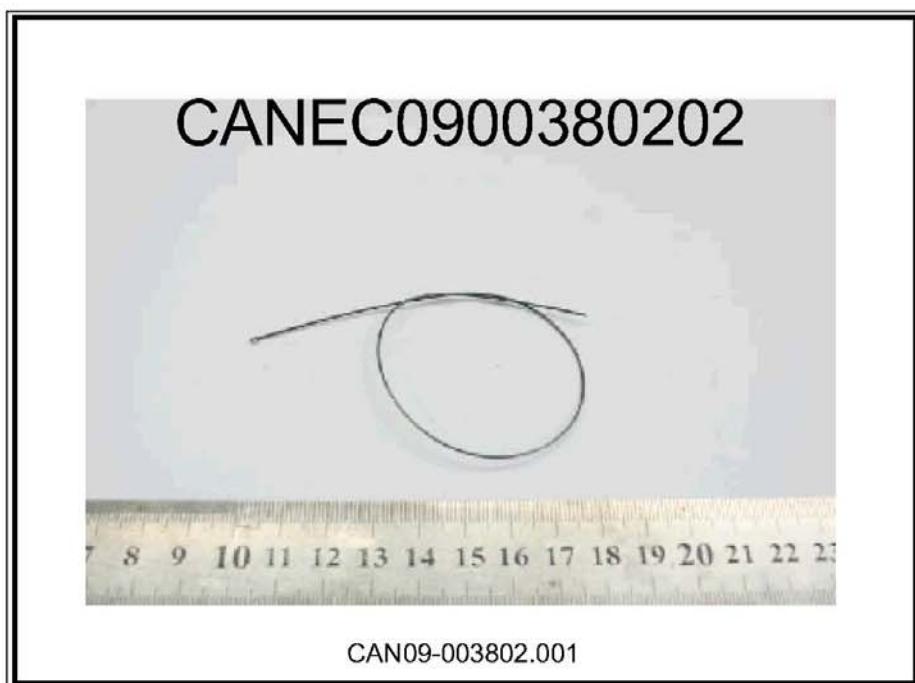
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测试报告

No. CANEC0900380202

日期: 2009年02月14日 第3页,共3页

样品照片:



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SGS-CATC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Services Chemical Laboratory

198 Kezhu Road, Scientech Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663
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 www.cn.sgs.com
t (86-20)82155555 f (86-20)82075113 e sgs.china@sgs.com

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