

規 格 書

SPECIFICATION

CUSTOMER NAME 客戶名稱: 海 普 科 技 有 限 公 司

CUSTOMER NO. 客戶編號:

SERIES 系 列: ANTINNAS

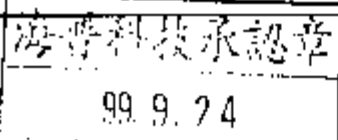
MODEL NO. 型 號: ANT-020KM(RP)-2.4

DRAWING NO. 圖 形 號: ANT-020KM(RP)-2.4-000

If specification of this product meets your request, please confirm all the items of it and return to us with signature and stamp, it will be basis of our production and record. Thanks your cooperation in advance!

若此產品規格符合貴司要求，敬請確認此規格後回傳我司，以作

我司產品製作之依據和存檔之用，多謝合作！

EXAMINE & APPROVAL 審批			
APPROVE 接受		FAIL 不接受	
			
SIGNATURE 簽署 Frank	STAMP 蓋章	DATE 日期	SIGNATURE 簽署 STAMP 蓋章 DATE 日期

DESIGNED BY 制表人	CHECKED BY 校正	APPROVED BY 審核	
Angela	Ken	Joe	
			發行日期: 2010-09-15
DATE 日期 10-09-15	DATE 日期 10-09-15	DATE 日期 10-09-15	NO. PT-ANT-10-09-12A

汎特電子企業有限公司

PENGTANG ELECTRONICS CO., LTD

地址: 廣東中山市坦洲鎮永二祺祥新街102號

電話: 0760-86363836

傳真: 0760-86382500

網址: <http://www.pengtang.com.tw>

臺北縣淡水鎮中正東路二段27-9號18F

02-28093538

02-28093596

規 格 書

SPECIFICATION

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APPROVE 接受			FAIL 不接受		
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Angela	Ken	Joe	
DATE 日期 10-09-15	DATE 日期 10-09-15	DATE 日期 10-09-15	發行日期: 2010-09-15
			NO.PT-ANT-10-09-12A

汎特電子企業有限公司

Lead-free

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SERIES: ANTINNAS

系列: ANTINNAS

Model NO: ANT-020KM(RP)-2.4

型號: ANT-020KM(RP)-2.4

1. Appearance : Have no remarkable damage, crack and rust etc.

外觀:無明顯損傷,裂紋,鏽迹等.

2. Configuration dimension

結構尺寸:

Apply to the appended drawing.

符合附加圖紙

3.Temperature Range: -30 ~+75 °C

溫度範圍: -30~+75 °C

4. ELECTRONIC CHARACTERISTICS.

電氣性能.

4.1.Frequency Range : 2.3~2.5GHz

頻率範圍 : 2.3~2.5GHz

4.2.Nominal Impedance : 50Ω

標稱阻抗 : 50Ω

4.3.Polarization : Vertical

極化 : 垂直

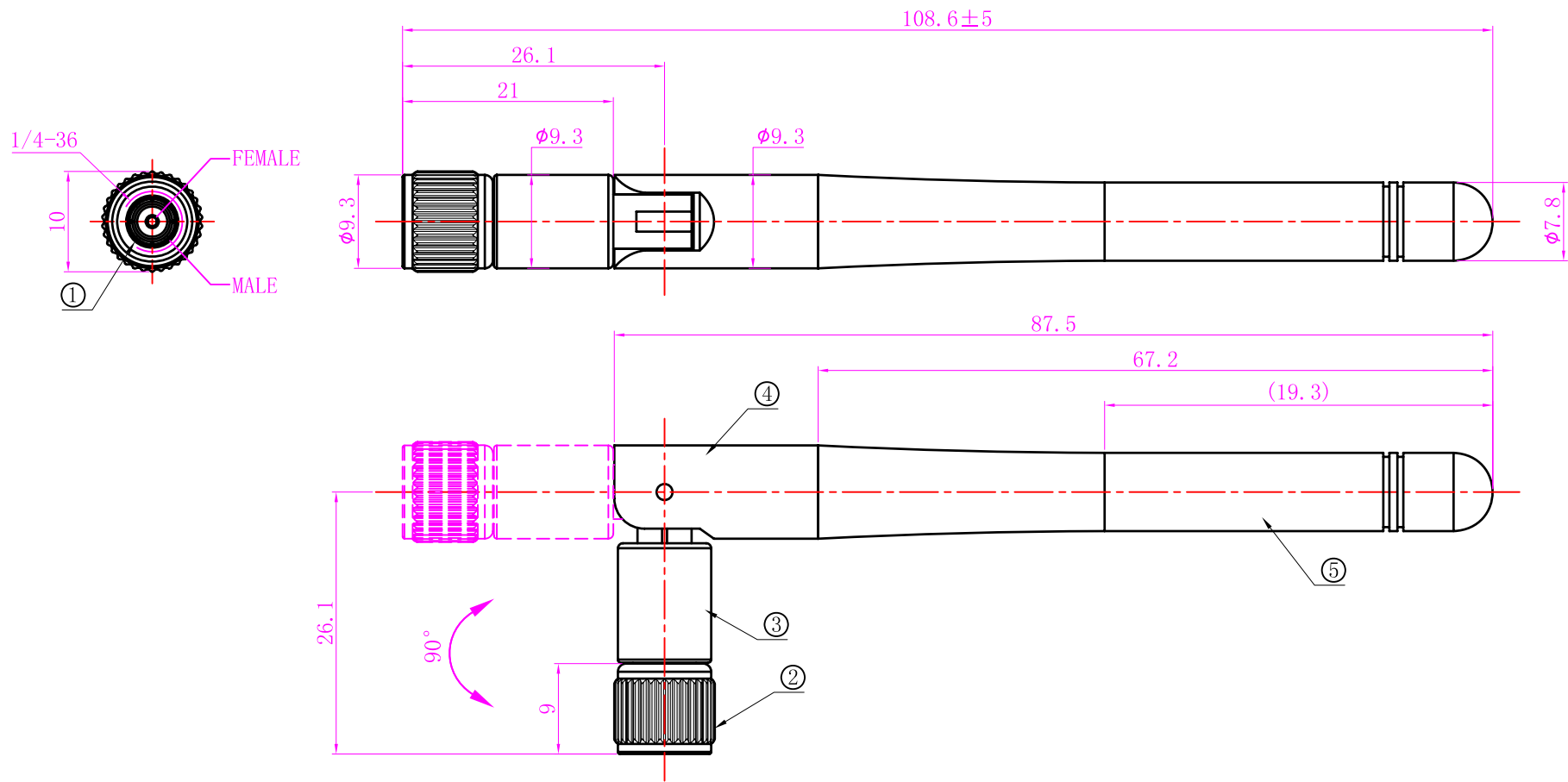
4.4.Max Power : 50W

最大功率 : 50W

ITEM 專案		TEST CONDITION 測試條件	SPECIFICATION 規格
5. ELECTRONICAL CHARACTERISTICS.電氣性能.			
5A	Gain 增益	The procedure is based on IEEE149 of 12.3. 本試驗依據 IEEE149 之 12.3 測試程式進行	5dBi Min 5 dBi 以上
5B	VSWR 電壓駐波比	The procedure is based on MIL-PRF-39012 本試驗依據 MIL-PRF-39012 測試程式進行	1.5 Max. 1.5 以下.
6. MECHANICAL CHARACTERISTICS.機械性能.			
6A	PULL AND EXTEND TEST 拉伸試驗	Between curve and perpendicularity : 15lbs/30sec. 彎曲和垂直之間 : 15 磅/30 秒 Between curve and plug : 15lbs/30sec. 彎曲和接頭之間 : 15 磅/30 秒 Between plug and coaxial-cable : 15lbs/1min. 接頭和同軸線之間 : 15 磅/1 分鐘	There shall be no sign of mechanical and electrical damage. 無任何迹象顯示機械及電器性能之損壞。
6B	VIBRATION TEST 振動試驗	After being applied vibration of amplitude of 1.5mm with 1000Hz of vibration frequency of perpendicular directions for 5 minute. 以 1.5mm 的振幅和 1000 Hz /sec 振動頻率以垂直方向振動 5 分鐘	There shall be no sign of damage mechanically and electrically. 無任何迹象顯示機械及電氣性能之損壞.

7. DURABILITY.耐久性.			
7A	HEAT TEST. 耐熱試驗	85±2℃ for 96 hours, after keep in normal condition for 30 min then to test.. 在 85±2℃ 環境中放 96 小時,再放在正常環境中 30 分鐘後進行測試。	All characteristic range is 30% of the initial value 所有規格變化範圍為初始值 30%
7B	HUMIDITY TEST. 耐濕試驗	40±2℃ 90–95% RH for 96 hrs. after keep in normal condition for 30 min then to test. 在 40±2℃ 90–95% RH 環境中放 96 小時,再放在正常環境中 30 分鐘後進行測試。	
7C	COLD TEST. 耐冷試驗	–20±2℃ for 96 hrs. After keep in normal condition for 30 min then to test. 在-20±2℃ 環境中放 96 小時,再置於正常環境中 30 分鐘後進行測試。	
8. MATERIAL SPECIFICATIONS.材料明細表（參考圖面料表）			
Item 專案	Part Name 名稱	Material 材料	Plating 鍍層
1	(RP)SMA MALE	BRASS	NI
2	SHELL	POM	BLACK
3	MOLDED	PBT	BLACK
4	JOINT	PC	BLACK
5	TUBE	TPE	BLACK

SYMB	REVISION	DATE	APVD.



TITLE	ANTENNA			DRAW	Chris	TOLERANCE OTHERWISE UNLESS SPECIFIED		9					
PART NO	ANT-020KM(RP)-2.4			CHECK	Chris	UP TO 5	± 0.2	7					
DRAW NO	ANT-020KM(RP)-2.4-000			APPROVED	Frank	ABOVE 5~30	± 0.3	6					
SCALE	1.5:1	UNIT	mm	DATE	2010-09-29	ABOVE 30~50	± 0.4	5	TUBE	TPE	1	BLACK	
						ABOVE 50	± 0.5	4	JOINT	PC	1	BLACK	
						ANGLE	$\pm 3^\circ$	3	MOLDED	PBT	1	BLACK	
								2	SHELL	POM	1	BLACK	
								1	(RP) SMA MALE	BRASS	1	Ni	
								NO.	DESCRIPTION	MATERIAL	QTY.	PLATING	MODEL



Test Report

No. CANEC0905732201

Date: 03 Dec 2009

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JIANGMEN POINTER METAL&ELECTRON PRODUCT CO.,LTD
LONGMAIN,DURUAN TOWN,PENGJIANG DISTRICT,JIANGMEN CITY,GUANGDONG PROVINCE
CHINA

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

SGS Job No. : 12269862 - GZ
Supplier : JIANGMEN POINTER METAL&ELECTRON PRODUCT CO.,LTD
Date of Sample Received : 23 Nov 2009
Testing Period : 23 Nov 2009 - 03 Dec 2009
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.

Manson Yang
Sr. Engineer

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198 Xianlu Road, Science 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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Test Report

No. CANEC0905732201

Date: 03 Dec 2009

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Test Results:

ID for specimen 1 : CAN09-057322.001
Description for specimen 1 : Brassy metal

Elementary Analysis

Test Item(s)	Unit	Test Method (Reference)	Result	MDL
Cadmium (Cd)	mg/kg	IEC 62321:2008, ICP-OES	41	2
Lead (Pb)	mg/kg	IEC 62321:2008, ICP-OES	37656	2
Mercury (Hg)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2
Hexavalent Chromium (CrVI) by boiling water extraction	-	IEC 62321:2008, 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.

Storage conditions and production date of the tested sample are unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

5. "-" = Not regulated

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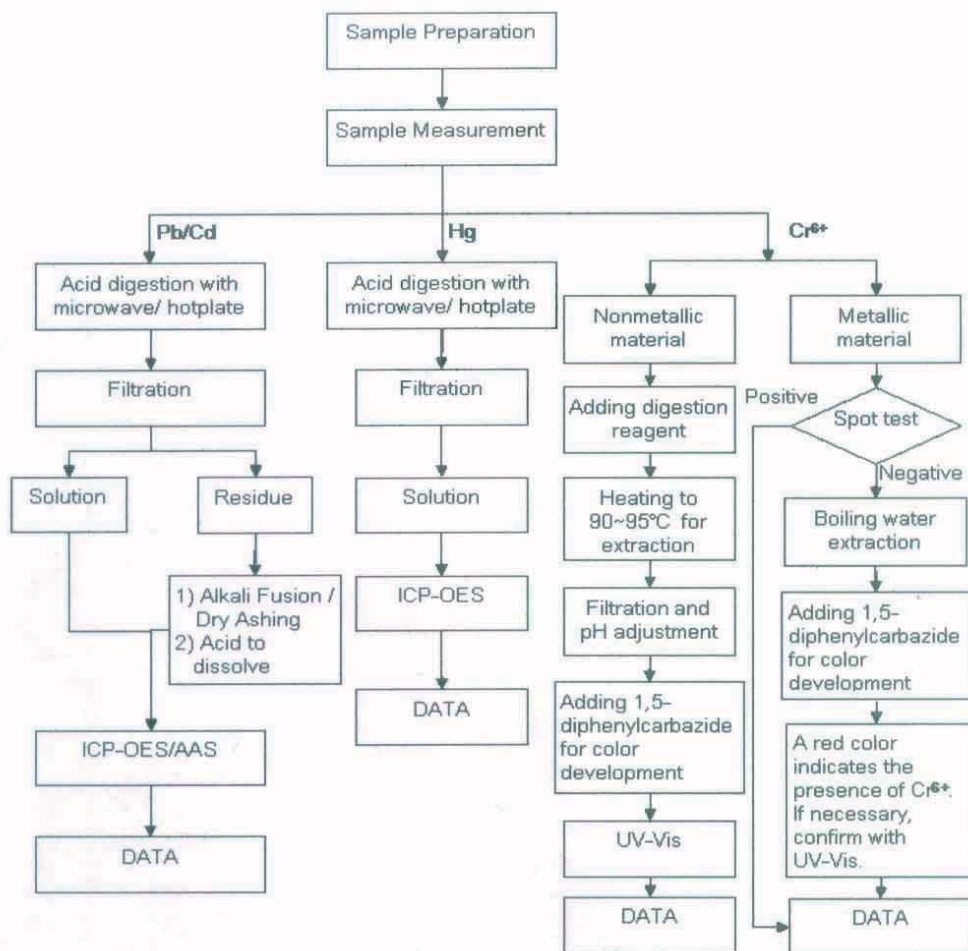
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中国·广州·经济技术开发区科学城科珠路198号 邮编:510663 t (86-20)82155555 f (86-20)82075113 e sgs.china@sgs.com

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ATTACHMENTS

Testing Flow Chart

- 1) Name of the person who made measurement: Luke Xu / Lily Lee
- 2) Name of the person in charge of measurement: Adams Yu / Leo Wang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr⁶⁺ test method excluded).



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

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t (86-20)82155555 f (86-20)82075113

www.cn.sgs.com

e sgs.china@sgs.com

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測試報告 Test Report

號碼(No.): CE/2009/C4753 日期(Date): 2009/12/25 頁數(Page): 1 of 6

長春人造樹脂股份有限公司
CHIANG CHUN PLASTICS CO., LTD.
(CHIANG CHUN CHEMICAL (ZHANGZHOU) CO., LTD.)
台北市中山區松江路301號7樓
NO. 301, 7TH FL., SONG KIANG ROAD, TAIPEI, TAIWAN



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 (1140, 1143, 1148, 1155, 1163, 1172)
收件日期(Sample Receiving Date) : 2009/12/21
測試期間(Testing Period) : 2009/12/21 TO 2009/12/25

測試需求(Test Requested) : 參照 RoHS 2002/95/EC 及其修訂指令要求。 (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) 以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) 以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) 以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) 以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).

結論(Conclusion) : 根據客戶所提供樣品的測試結果, 符合RoHS(2002/95/EC)及其修訂指令之要求 (Based upon the performed tests by submitted samples, the test results comply with the limits of RoHS Directive 2002/95/EC and its subsequent amendments).


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

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NO. 301, 7TH FL., SONG KIANG ROAD, TAIPEI, TAIWAN



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)	RoHS 限值 (Limit)
		No.1		
鎘 / Cadmium (Cd)	(1)	n.d.	2	100
鉛 / Lead (Pb)	(2)	n.d.	2	1000
汞 / Mercury (Hg)	(3)	n.d.	2	1000
六價鉻 / Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	2	1000
多溴聯苯總和 / Sum of PBBs	(5)	n.d.	-	1000
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.	-	1000
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	-

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測試報告 Test Report

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CHANG CHUN PLASTICS CO., LTD.

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

台北市中山區松江路301號7樓

NO. 301, 7TH FL., SONG KIANG ROAD, TAIPEI, TAIWAN



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

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日期(Date): 2009/12/25

頁數(Page): 4 of 6

長春人造樹脂廠股份有限公司

CHANG CHUN PLASTICS CO., LTD.

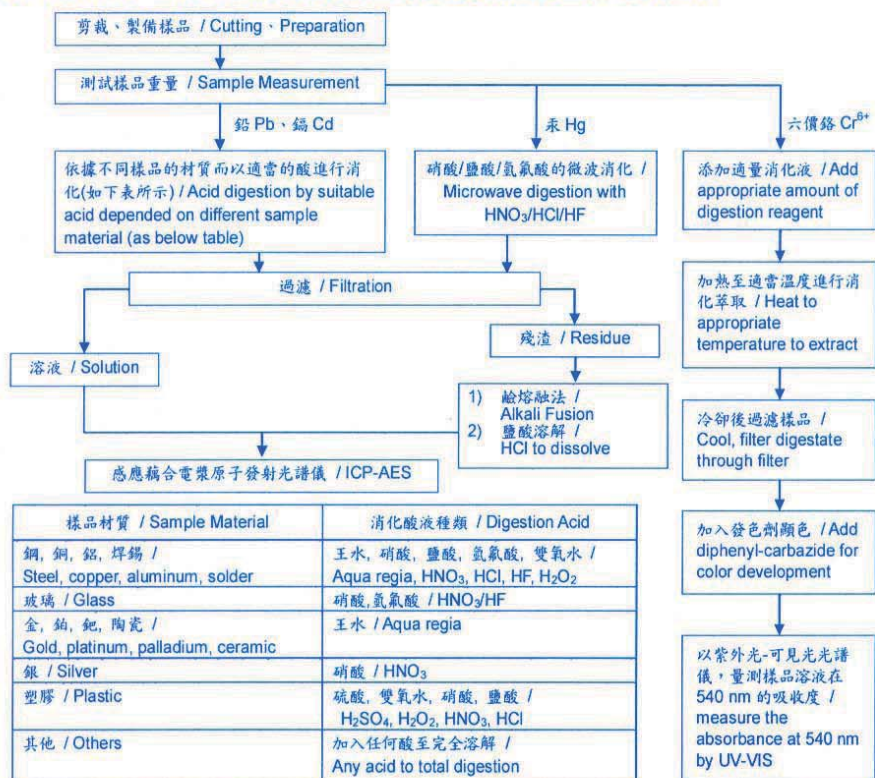
(CHANG CHUN CHEMICAL (ZHANGZHOU) CO., LTD.)

台北市中山區松江路301號7樓

NO. 301, 7TH FL., SONG KIANG ROAD, TAIPEI, TAIWAN



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



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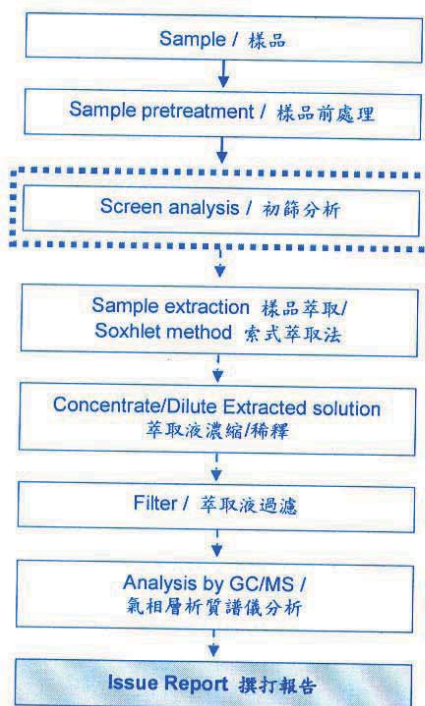
多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 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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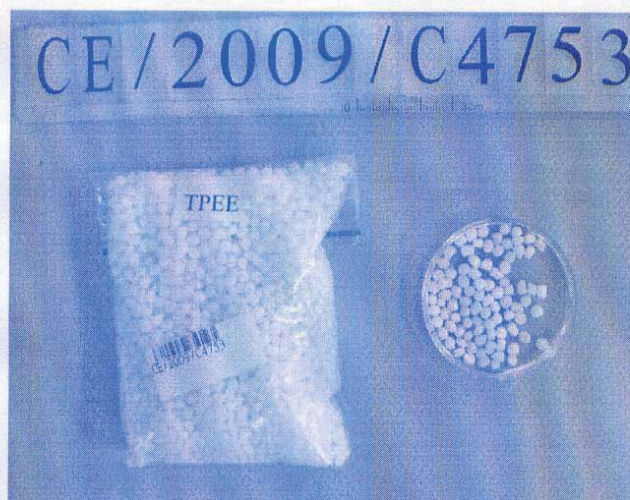
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測試報告 Test Report

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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) : POLYBUTYLENE TEREPHTHALATE (PBT)
樣品型號(Style/Item No.) : PBT (2000, 2000T, 2100, 4108, 4115, 4115F, 4120, 4130, 4130F, 4140, 4630, 4730, 4815, 4820, 4830, 4840, 4815G, 4830G, 8815, 8830)
收件日期(Sample Receiving Date) : 2009/12/21
測試期間(Testing Period) : 2009/12/21 TO 2009/12/25

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) 以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) 以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) 以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) 以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).

結論(Conclusion) : 根據客戶所提供樣品的測試結果，符合RoHS(2002/95/EC)及其修定指令之要求 (Based upon the performed tests by submitted samples, the test results comply with the limits of RoHS Directive 2002/95/EC and its subsequent amendments).


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

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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)	RoHS 限值 (Limit)
		No.1		
鎘 / Cadmium (Cd)	(1)	n.d.	2	100
鉛 / Lead (Pb)	(2)	n.d.	2	1000
汞 / Mercury (Hg)	(3)	n.d.	2	1000
六價鉻 / Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	2	1000
多溴聯苯總和 / Sum of PBBs	(5)	n.d.	-	1000
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.	-	1000
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	-

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測試報告 Test Report

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NO. 301, 7TH FL., SONG KIANG ROAD, TAIPEI, TAIWAN



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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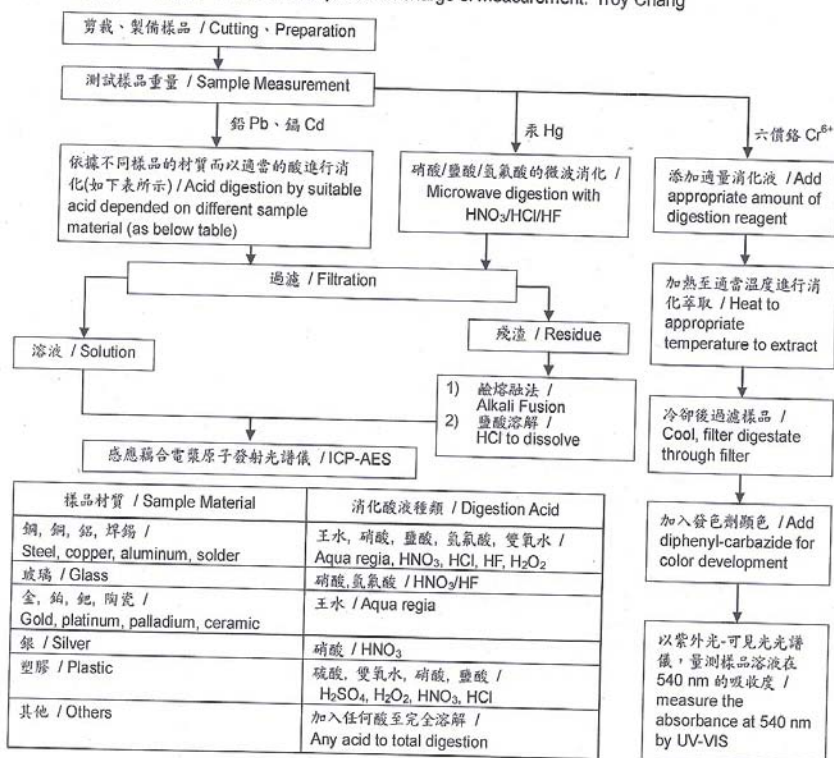
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
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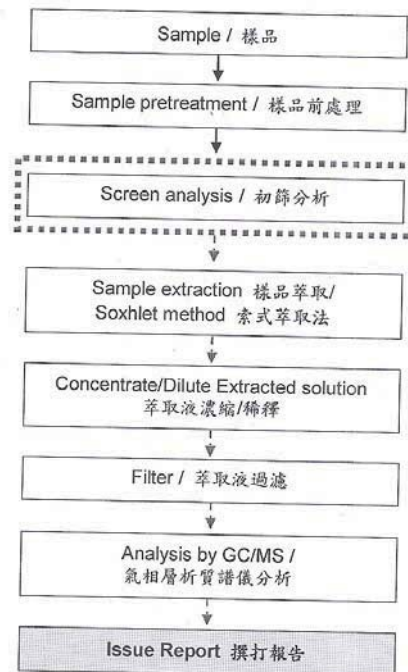
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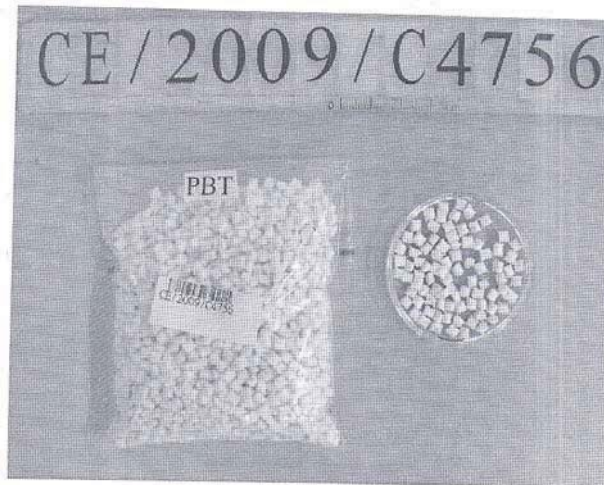
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检测报告

报告编号 RLSZC000461150001C

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申请单位 东莞彩之虹化工有限公司

地 址 东莞市樟木头镇柏地管理区柏峰4街6号

样品信息

样品名称 色粉

样品描述 绿色粉末

样品型号 有机系列:CH-1102(10G黄), 1103(GF黄), 1104(GR黄), 1105(G黄), 1106(AR黄), 1107(GG黄), 1108(H黄), 1110(10G黄), 1111(HGR黄), 1112(HG黄), 2104(2G橙), 3110(BBM红), 3112(BR红), 3115(RE红), 3116(2030红), 4101(RL紫), 4101A/B, 5101(B蓝), 5102(BGS蓝), 5103(BS蓝), 6101(G绿)

样品接收日期 2010.02.26

样品检测日期 2010.02.26-2010.03.06

检测要求

根据客户要求,测定所提交样品中的铅(Pb),镉(Cd),汞(Hg),六价铬(Cr(VI)),多溴联苯(PBBs),多溴二苯醚(PBDEs)的含量。

检测依据

测试项目	测试方法	测试仪器	方法检测限
铅(Pb)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES	2 mg/kg
镉(Cd)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES	2 mg/kg
汞(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES	2 mg/kg
六价铬(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis	2 mg/kg
多溴联苯(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg
多溴二苯醚(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg

检测结果 请参见下页

主 检:

签 发:



技术经理

审 核:

Jed

签发日期:

2010.03.06

No. 82076918



检测报告

报告编号 RLSZC000461150001C

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检测结果

测试项目	含量
铅 (Pb)	14 mg/kg
镉 (Cd)	N. D.
汞 (Hg)	N. D.
六价铬 (Cr (VI))	N. D.

测试项目	含量
多溴联苯 (PBBs)	
一溴联苯	N. D.
二溴联苯	N. D.
三溴联苯	N. D.
四溴联苯	N. D.
五溴联苯	N. D.
六溴联苯	N. D.
七溴联苯	N. D.
八溴联苯	N. D.
九溴联苯	N. D.
十溴联苯	N. D.

测试项目	含量
多溴二苯醚 (PBDEs)	
一溴二苯醚	N. D.
二溴二苯醚	N. D.
三溴二苯醚	N. D.
四溴二苯醚	N. D.
五溴二苯醚	N. D.
六溴二苯醚	N. D.
七溴二苯醚	N. D.
八溴二苯醚	N. D.
九溴二苯醚	N. D.
十溴二苯醚	N. D.

注释: 对于检测铅, 镉, 汞之样品已完全溶解。

-N.D. = 未检出 (小于方法检测限)

-mg/kg = ppm = 百万分之几

备注: 报告编号中“C”表示此报告为中文版本。



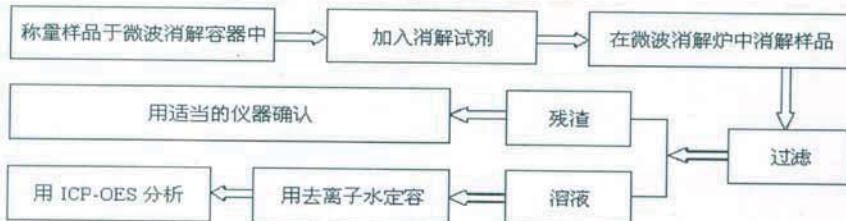
检测报告

报告编号 RLSZC000461150001C

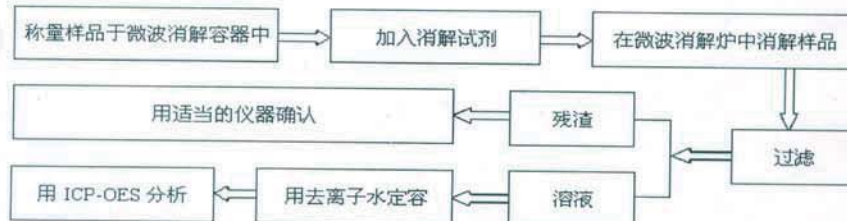
第 3 页 共 4 页

检测流程

1. 铅 (Pb), 镉 (Cd)



2. 汞 (Hg)



3. 六价铬 (Cr(VI))



4. 多溴联苯 (PBBs), 多溴二苯醚 (PBDEs)



检测报告

报告编号 RLSZC000461150001C

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样品图片



报告结束

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深圳市宝安区70区鸿威工业园C栋



检 测 报 告

报告编号: CHB(B)12022282099

委托编号: CHB(Y)10030199

第 1 页 共 3 页

申请单位名称: 乐清市永弘塑料有限公司

申请单位地址: 浙江省乐清市淡溪第一工业区黄塘路 18 号

委托测试的样品及申请商对样品的说明如下:

样品名称 : 黑 PC
样品型号 : -1250
样品材质 : /
批号或编号 : 10030566
供应商 : /
送样者 : /
送样数量 : /

样品收到日期 : 2010.03.05
样品检测日期 : 2010.03.05-2010.03.06

测试类别 : 委托检测
测试要求 : 参照欧盟 RoHS 指令 2002/95/EC 及后续修正指令, 测试委托样品中的镉、铅、汞、六价铬、多溴联苯和多溴联苯醚的含量

测试方法 : 参照 IEC 62321:2008
条款 7 聚合物、金属和电子产品中汞的测定
条款 8 聚合物中铅、镉的测定
附录 A 聚合物中多溴联苯、多溴联苯醚的测定
附录 C 聚合物和电子产品中六价铬的测定

测试仪器 : 用 ICP-OES 测定铅、镉、汞的含量
用 UV-Vis 测定六价铬的含量
用 GC-MS 测定多溴联苯、多溴联苯醚的含量

测试结果 : 见后续页

测试结论 : 根据所送样品进行的测试, 测试结果符合欧盟 RoHS 指令 2002/95/EC 及后续修正指令的要求

编 写: 张圆圆

批 准: 刘冰

审 核: 王立彪

日 期: 2010-03-06

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温州中测环保检测技术有限公司
Wenzhou Zhongce Environmental Protection Co., Ltd

Floor 4, Building C, No.261, Weishi Road, Economic Development-Area, Yueqing, China
中国 温州 乐清经济开发区纬十七路261号研发区C幢四楼
电话 Tel: +86-577-62661333 传真 Fax: +86-577-61603661
www.chb-zhongce.com



检测报告

报告编号: CHB(B)12022282099

委托编号: CHB(Y)10030199

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测试结果如下:

检测项目	单位	测试方法	MDL	A 结果
镉 (Cd)	mg/kg	IEC 62321:2008 条款 8	2	ND
铅 (Pb)	mg/kg	IEC 62321:2008 条款 8	2	ND
汞 (Hg)	mg/kg	IEC 62321:2008 条款 7	2	ND
六价铬 (Cr VI)	mg/kg	IEC 62321:2008 附录 C	2	ND
多溴联苯之和(PBBs)	mg/kg	IEC 62321:2008 附录 A	-	-
一溴联苯	mg/kg		5	ND
二溴联苯	mg/kg		5	ND
三溴联苯	mg/kg		5	ND
四溴联苯	mg/kg		5	ND
五溴联苯	mg/kg		5	ND
六溴联苯	mg/kg		5	ND
七溴联苯	mg/kg		5	ND
八溴联苯	mg/kg		5	ND
九溴联苯	mg/kg		5	ND
十溴联苯	mg/kg		5	ND
多溴联苯醚之和(PBDEs)	mg/kg		-	-
一溴联苯醚	mg/kg		5	ND
二溴联苯醚	mg/kg		5	ND
三溴联苯醚	mg/kg		5	ND
四溴联苯醚	mg/kg		5	ND
五溴联苯醚	mg/kg		5	ND
六溴联苯醚	mg/kg		5	ND
七溴联苯醚	mg/kg		5	ND
八溴联苯醚	mg/kg		5	ND
九溴联苯醚	mg/kg		5	ND
十溴联苯醚	mg/kg		5	ND

测试样品描述:

A: 黑色塑料颗粒

备注:

- 1.mg/kg=ppm
- 2.MDL=方法检测极限值
- 3.ND=未检出 (小于 MDL)
- 4.“-”=未规定或不适用

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温州中测环保检测技术有限公司

Floor 4, Building C, No.261, Weishi Road, Economic Development-Area, Yueqing, China
中国 温州 乐清经济开发区纬十七路261号研发区C幢四楼
电话 Tel: +86-577-62661333 传真 Fax: +86-577-61603661
www.chb-zhongce.com

检测报告

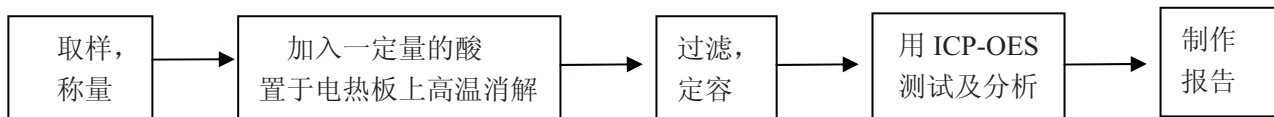
报告编号: CHB(B)12022282099

委托编号: CHB(Y)10030199

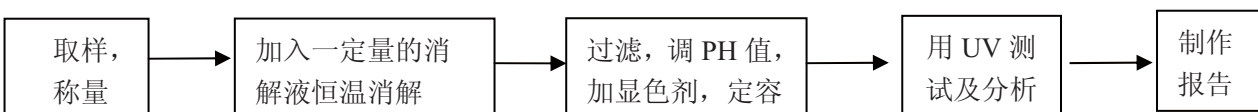
第 3 页 共 3 页

测试流程:

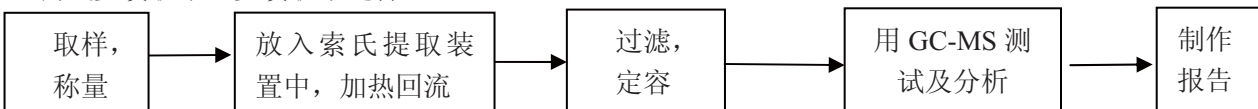
1、测试镉、铅、汞含量



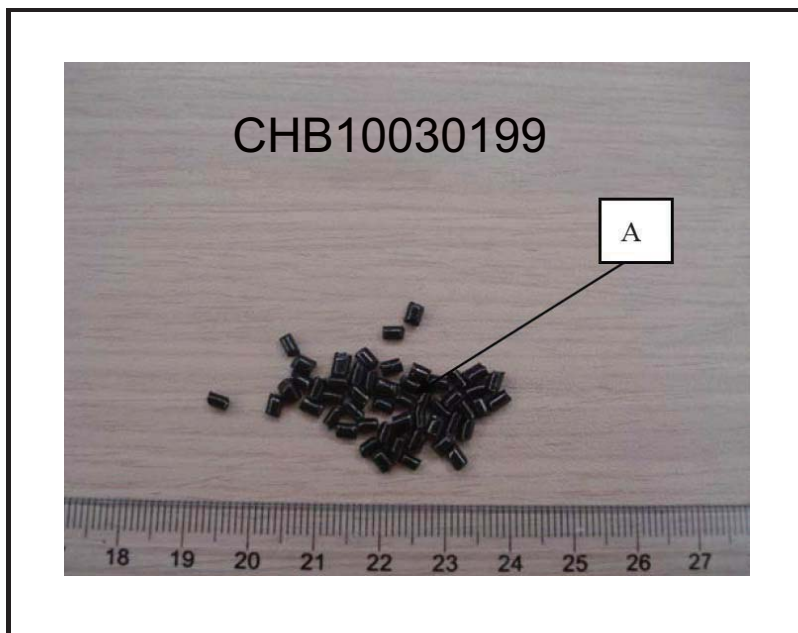
2、测试六价铬含量



3、测试多溴联苯、多溴联苯醚含量



附: 样品照片



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报告专用章
Wen Zhou Central Survey Environmental Protection Co., Ltd
温州中测环保检测技术有限公司

Floor 4, Building C, No.261, Weishi Road, Economic Development Area, Yueqing, China
中国 温州 乐清经济开发区纬十七路261号研发区C幢四楼
电话Tel: +86-577-62661333 传真Fax: +86-577-61603661
www.chb-zhongce.com



Test Report

No. CANEC1003539701

Date: 20 Aug 2010

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JIANGMEN POINTER METAL&ELECTRON PRODUCT CO.,LTD
LONGMIAN,DURUAN TOWN,PENGJIANG DISTRICT,JIANGMEN CITY,GUANGDONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as :
COPPER-PIPE PLATE BLACK CR

SGS Job No. : 12690080 - GZ
Supplier : JIANGMEN POINTER METAL&ELECTRON PRODUCT CO.,LTD
Date of Sample Received : 17 Aug 2010
Testing Period : 17 Aug 2010 - 20 Aug 2010

Test Requested : Selected test(s) as requested by client.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).
Conclusion : Based on the performed tests on submitted sample(s), the results comply with the RoHS Directive 2002/95/EC and its subsequent amendments.

Signed for and on behalf of
SGS-CSTC Ltd.

Alpher Qiu
Approved Signatory

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Société Générale de Surveillance

58 Xinhua Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

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Test Report

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Test Results:

ID for specimen 1 : CAN10-035397.001
Description for specimen 1 : Black plated metal tube

RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321:2008, ICP-OES	6	2	100
Lead (Pb)	mg/kg	IEC 62321:2008, ICP-OES	38	2	1000
Mercury (Hg)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by boiling water extraction	-	IEC 62321:2008, 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.
Storage conditions and production date of the tested sample are unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.
5. # = Positive indicates the presence of CrVI on the tested areas.
Negative indicates the absence of CrVI on the tested areas.
6. "-" = Not regulated

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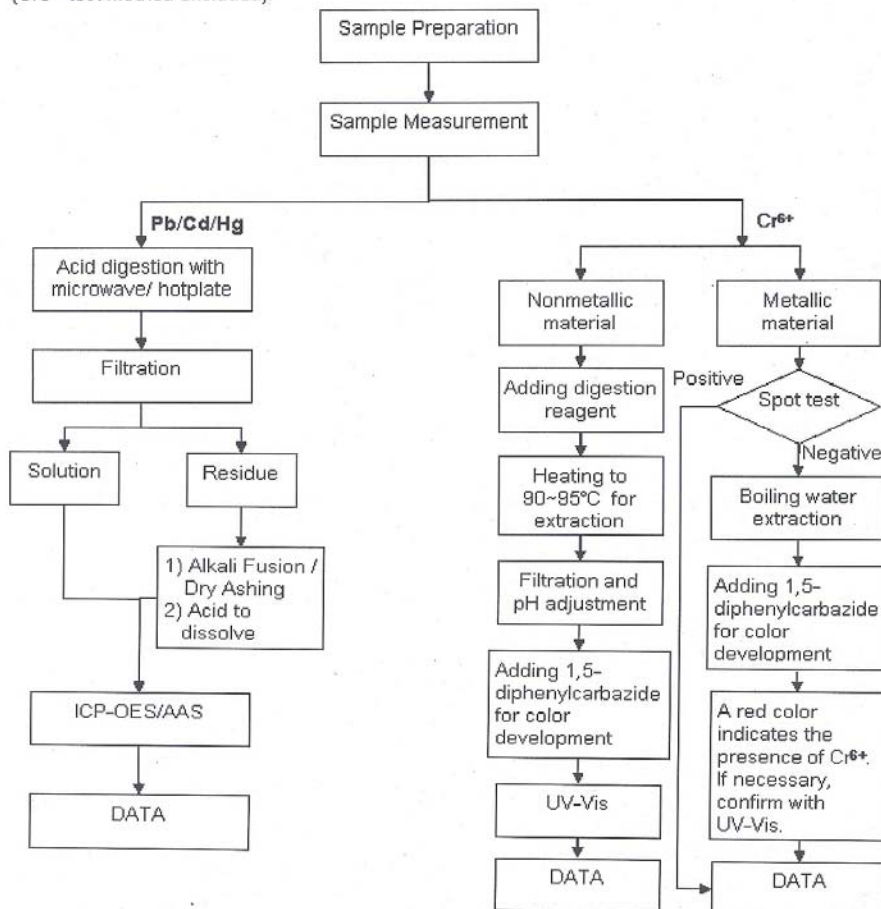
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ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang / Ross Zhan
- 2) Name of the person in charge of testing: Adams Yu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded).



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88 Kien Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China. 510663 T (86-20) 82155555 F (86-20) 82075113 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路108号 邮编: 510663 T (86-20) 82155555 F (86-20) 82075113 E sgs.china@sgs.com

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Test Report

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

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196 Xuehu Road, Science Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663 1 (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
中國·廣州·經濟技術開發區科學城科珠路196號 郵箱: 510663 1 (86-20) 82155555 f (86-20) 82075113 * sgs.china@sgs.com

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歐盟議會和歐盟理事會 2003 年 1 月 23 日第 2002/95/EC 號

關於在電氣電子設備中限制使用某些有害物質指令

(外經貿部科技司翻譯，僅供參考)

歐洲議會和歐盟理事會

注意到成立歐洲共同體的條約，特別是其中第 95 條，

注意到歐盟委員會的建議，

注意到歐盟經濟與社會委員會的意見，

注意到歐盟地區委員會的意見，

按照歐洲共同體條約第 251 條所規製的程式行事並根據協調委員會於
2002 年 11 月 8 日透過的聯合文本，

鑑於：

(1) 各成員國為限制在電子電氣設備中使用有害物質而製訂的法規或行政措施之間存在的差異能產生貿易壁壘和扭曲共同體內的競爭，甚至對單一市場的建立及其功能產生直接影響。因此有必要協調成員國在此領域的法規，以利於保護人類健康和報廢電子電氣設備合乎環境要求的回收和處理。

(2) 歐盟理事會於 2000 年 12 月 7~9 日在尼斯召開的會議上批准了部長理事會於 2000 年 12 月 4 日就預防原則透過的決定。

(3) 歐盟委員會 1996 年 7 月 30 日回顧共同體廢棄物管理戰略的通訊強調了減少廢物中有害物質含量的必要並指出製定在產品和加工過程中限制使用這些有害物質的歐市法規的潛在益處。

(4) 理事會 1988 年 1 月 25 日為消除鎘 環境污染的歐市行動計畫的決定要求歐盟委員會刻不容緩地發展該計畫中的特殊措施。人類健康也必須得

到保護，因此應實施一個特別限制鎘的使用及加快研究其替代品的整體戰略。
決定強調在不存在適當的和更安全的選擇的情況下應限制鎘的使用。

（5）證據表明，歐盟理事會和歐洲議會 2003 年 1 月 27 日關於報廢電子電氣設備的第 2002/96/EC 號指令規定的報廢電子電氣設備的收集、處理、回收和處置措施對於減少與涉及的重金屬和阻燃劑相關的廢物管理問題很必要。然而，儘管有那些措施，但在目前的廢物處理中仍將繼續發現報廢電子電氣設備的實質部分。即使報廢電子電氣設備被分類收集並遵守回收程式，但汞、鎘、鉛、六價鉻、聚溴聯苯（PBB）、聚溴二苯醚（PBDE）的成分仍有可能對人類健康和環境形成危險。

（6）考慮到技術和經濟的可行性，確保顯著減少這些物質對健康和環境形成的危險的最有效的、且在共同體內可實現所選擇保護水準的模式是在電子電氣設備中以安全或更安全的物質替代它們。限制這些有害物質的使用也就是提升報廢電子電氣設備回收的可能性和經濟利益並減少它們對回收工廠工人健康所造成的負面影響。

（7）要科學研究與評估本指令管轄的物質，它們已在歐市和成員國層面受到不同措施的管理。

（8）本指令規定的措施考慮了現有的國際準則和建議並基於對可獲得的科學和技術訊息的評估。由於缺乏措施可能在共同體內產生危險，所以這些措施對實現所選擇的對人類和動物健康及環境的保護水準是必要的。應及時檢查這些措施，必要時，考慮了獲得的科技訊息後可進行調整。

（9）本指令的實施不影響共同體在安全和衛生要求方面的立法以及共同體關於廢物管理的特殊立法，特別是 1991 年 3 月 18 日理事會關於含有某些

危險物質 的電池和蓄電池的第 91/157/EEC 號指令。

(10) 應考慮不含有重金屬、聚溴二苯醚 (PBDE) 和 聚溴聯苯 (PBB) 的電子電氣設備的技術發展。一旦獲得了科學證據和考慮了預防原則，應檢查是否可禁止其它有害物質的使用並以更加合乎環境要求的、確保對消費者的保護不低於相同水準的替代品來替代它們。

(11) 如果從科技角度來看，不可能有替代品，或者替代品對環境和健康所造成的負面影響大於其對環境和健康帶來的益處，那麼可免除執行替代品的要求。開發電子電氣設備中有害物質替代品的工作仍要繼續進行，以使它們符合電子電氣設備使用者的健康與安全需要。

(12) 因為產品的再利用、翻新和延長使用期是有益的，所以需要提供必要的零件。

(13) 與逐步停止使用和禁止使用有害物質的要求免除相關的科技進步的修改應由歐盟委員會按照委員會程式實現。

(14) 實施本指令所必要的措施應根據理事會 1999 年 6 月 28 日的 1999/468/EC 號決議規定的、實施授權給歐委會的權力的程式來採納。

茲透過本指令：

第 1 條

目標

本指令的目標是使各成員國關於在電子電氣設備中限制使用有害物質的法律趨於一致，有助於保護人類健康和報廢電子電氣設備合乎環境要求的回收和處理。

第 2 條

範圍

1· 在不違反第 6 條的情況下，本指令應適用於提令第 2002/96/EC 號指令（WEEE）附錄 I A 規定的 1、2、3、4、5、6、7 和 10 類電子電氣設備，以及家用電燈泡和照明設施。

2· 本指令的實施不應違背共同體關於安全 and 健康要求的立法和共同體關於廢物管理的專門立法。

3· 本指令對 2006 年 7 月 1 日前拋放市場的電子電氣設備的部件、修理部件或再利用部件不適用。

第 3 條

定義

就本指令而言，適用下述定義：

(a) "電子電氣設備"或"EEE"指為正常營運而倚賴於電流或電磁場工作的設備和指令 2002/96/EC（WEEE）附件 I A 中列出的能產生、傳輸和測量電流和電磁場的設備，且這些設備的設計電壓是交流電不超過 1000 伏特，直流電不超過 1500 伏特；

(b) "生產者"指任何人，他們不管所採用的銷售技術，根據歐洲議會和理事會 1997 年 5 月 20 日關於保護遠程合約中消費者的第 1997/7/EC 號指令包括程通訊：

(i) 用自己品牌生產並銷售電子電氣設備；

(ii) 以自己品牌再銷售由其它供應商提供的設備，如果再銷售的設備上仍保留原生產者的品牌，這樣的再銷售者不能視作為上述 (i) 副點的生產者；
或

(iii) 專業從事向成員國進口或退場門電子電氣設備。

僅僅是按照某種金融協議提供資金者不能被視為 "生產者"，除非他符合上述 (i) 至 (iii) 副點作為生產者行事。

第 4 條

防止

1· 成員國將確保，從 2006 年 7 月 1 日起，拋放於市場的新電子和電氣設備不包含鉛，汞，鎘，六價鉻，聚溴二苯醚 (PBDE) 或 聚溴聯苯 (PBB)。成員國在本指令透過前根據共同體法規製定的限制或禁止在電子電氣設備中使用這些物質的措施可以維持至 2006 年 7 月 1 日。

2· 條款 1 將不適用於附件中所列舉的應用。

3· 基於歐委會的建議，一旦可獲得科學證據，歐洲議會和理事應根據《第六個共同體環境行動計畫》中規定的化學政策原則決定其它有害物質的禁用以及選擇確保對消費者保護水準至少相同的更加合乎環境要求的產品作為其替代品。

第 5 條

適應科學和技術進步

1· 為下列目的，旨在使附件適應科技進步的必要修改，應根據條款 7 (2) 提及的程式而進行：

(a) 必要時，可建立允許在電子電氣設備的特殊物質和部件中含有條款 4 (1) 所提及物質的最高值；

(b) 電子電氣設備的材料和組件可背離第 4 款 (1) 的規定，如果它們的去除或透過設計改變而使用替代品或使用不含有提及的材料或物質的材料

或組件在科技上不現實時，或替代品對環境、健康和/或消費者安全造成的負面影響好像超過它們對環境、健康和/或消費者安全造成的益處時；

(c) 至少每隔四年對附件進行一次檢查，或者在將一項加入到附件後四年對附件進行檢查，加入新項的目的是考慮取消附件中的電子電氣設備材料和組件，如果它們的去除或透過設計改變而使用替代品或使用不包括第 4(1) 款的材料或物質的材料和組件在科技上是可行時，條件是替代品對環境、健康和/或消費者安全產生的負面影響不可能大於其對環境、健康和/或消費者安排帶來的正面利益。

2. 附件在遵照條款 1 修改之前，歐盟委員會將專門與電子電器設備生產者、回收者、垃圾處理者、環保組織和雇員與消費者協會諮詢磋商。磋商結果應遞交給條款 7(1) 提及的委員會。歐盟委員會應考慮其收到的意見。

第 6 條

檢查

在 2005 年 2 月 13 日之前，歐盟委員會應檢查本指令規定的措施以便必要時考慮新的科學證據。

特別是，歐盟委員會應在該日期之前提交將第 2002/96/EC (WEEE) 號指令附件 I A 所列的第 8 和第 9 類的設備納入本指令範圍的建議。

委員會也將根據科學事實並考慮預防原則，研究條款 4(1) 中物質是否需要調整，適當時，可向歐洲議會和理事會提出建議。

應當特別注意檢查電子電氣設備中使用的其它有害物質和材料對環境和人類健康的影響。歐委會將檢查取代這些物質和材料的可行性，並且在適當的時候，就擴大第 4 條的範圍向歐洲議會和理事會提交建議。

第 7 條

委員會

1·歐盟委員會將由根據第 75/442/EEC 號 指令第 18 條成立的委員會協助工作。

2·當參考本款時，應適用第 1999/468/EC 號決議第 5 條、第 7 條以及第 8 條。

第 1999/468/EC 號決議第 5 條 6 款規定的期間應被定為 3 個月。

3·委員會將採用其程式規定。

第 8 條

懲罰

成員國應決定對違反根據本指令而製定的成員國規定的行為適當的懲罰。這些規定的懲罰應當有效，適度並有勸誡性。

第 9 條

過渡

1·成員國應在 2004 年 8 月 13 日之前使符合本指令所必要的法律、規則和行政規定生效。並將這些立即通知歐委會。

當成員國製訂那些措施時，它們必須包括本指令的參照號或在該國官方出版物上出版時伴以此參考號。標誌此參考號的方法由成員國規定。

2·成員國要將本指令範圍內製定的所有法律、規則和行政規定的文本通知歐委會。

第 10 條

生效

本指令自在歐洲共同體《官方公報》上公佈之日起生效。

第 11 條

收受方

本指令將簽發至各成員國。

2003 年 1 月 23 日完成於布魯賽爾

歐洲議會主席 歐盟理事會主席

P. COX G. DRYG

ANNEX （附件）

免除第 4（1）條中所要求的鉛、汞、鎘和六價鉻的應用

- 1 · 小型日光燈中的汞含量不得超過 5 毫克/燈；
- 2 · 一般用途的直管日光燈中的汞含量不得超過：
 - 鹽磷酸鹽 10 毫克
 - 正常的三磷酸鹽 5 毫克
 - 長效的三磷酸鹽 8 毫克
- 3 · 特殊用途的直管日光燈中的汞含量；
- 4 · 本附錄中未特別提及的其它照明燈中的汞含量；
- 5 · 陰極射線管、電子部件和發光管的玻璃內的鉛含量；
- 6 · 鋼中合金元素中的鉛含量達 0.35%、鋁含量達 0.4%，銅合金中的鉛含量達 4%；
- 7 · -- 高溫融化的焊料中的鉛（即：錫鉛焊料合金中鉛含量超過 85%）；

- 用於伺服器、存儲器和存儲系統的焊料中的鉛（豁免准予至 2010 年）；
 - 用於交換、信號和傳輸，以及電信網路管理的網路基礎設施設備中焊料中的鉛；
 - 電子陶瓷產品中的鉛（例如：高壓電子裝置）；
- 8· 根據修改關於限制特定危險物質和預製品銷售和使用的第 76/769/EEC 號指令的第 91/338/EEC 號指令禁止以外的鍍電鍍。
- 9· 在吸收式電雪櫃中作為碳鋼冷卻系統防腐劑的六價鉻。
- 10· 根據在第 7（2）條中提及的程式，歐盟委員會應評價以下方面的應用：
- 十卡二苯醚（Deca BDE）；
 - 特殊用途的直管日光燈中的汞；
 - 以下用途中所使用的焊料中的鉛：伺服器、存儲器、用於交換和傳輸的網路基礎設施、電信網路管理設備（旨在設定本指令豁免部分的特定截止時間）；
 - 燈泡。

目前重點是盡快決定這些項是否進行相應的修改。

[英文原文](#)

[外经贸部科技司发布欧盟电子电气产品两指令中文译文](#)

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-2.72	-2.85	-2.65	-2.59	-2.52	-2.49	-2.27	-1.99	-2.00	-2.19	-2.26
Gain (dBi)	1.27	1.14	1.14	1.37	1.56	1.93	1.96	1.88	1.46	1.17	0.97
Efficiency (%)	53.48	51.87	54.37	55.10	55.95	56.40	59.29	63.25	63.09	60.45	59.39
Directivity (dB)	3.59	3.59	3.79	3.96	4.08	4.41	4.23	3.87	3.46	3.36	3.23
Peak Gain Position (Theta)	70.00	71.00	71.00	72.00	72.00	72.00	72.00	72.00	73.00	73.00	74.00
Peak Gain Position (Phi)	240.00	240.00	240.00	300.00	300.00	300.00	300.00	330.00	300.00	330.00	300.00
Efficiency ThetaPol (%)	51.92	50.26	52.74	53.31	54.27	54.66	57.57	61.44	61.47	58.92	57.89
Efficiency PhiPol (%)	1.55	1.61	1.62	1.79	1.68	1.75	1.72	1.81	1.62	1.53	1.50
Upper Hem. Efficiency (%)	37.53	35.96	37.45	38.02	39.07	39.90	42.41	45.37	45.19	42.98	41.82
Lower Hem. Efficiency (%)	15.95	15.91	16.92	17.08	16.88	16.50	16.88	17.88	17.90	17.47	17.57
Eff 15deg (dBi)											
Gain 15deg (dBi)											
Eff 30deg (dBi)											
Gain 30deg (dBi)											
Eff 30deg (%)											
Gain 30deg (dBi)											
Eff 30deg (%)											
	0.81	0.68	1.08	1.26	1.43	1.80	1.85	1.80	1.39	1.08	0.86
	-10.35	-9.81	-9.53	-9.15	-9.79	-9.45	-9.53	-9.30	-10.14	-10.33	-10.47
Empty											

