Litz

承 認 書

SPECIFICATION FOR APPROVAL

客戶名稱(CUSTOMER): 銳珂(亅	海)醫療器材有限公司
----------------------	------------

品名(DESCRIPTION): Antenna-Wi-Fi, 2. 4G, White Plastic Cover

客户料號(PART NO): 2G6692

料 號(PART NO): CAR-ATR-187-004

送樣日期(DATE): 2009.06.22

承認號碼(APPROVED NO):

研 發 部	品管部	採購部	經 理
R&D. DEP	Q. C DEP	PURCHASER DEP	MANAGER

堅詠工業有限公司 利慶科技(深圳)有限公司

台北:三重市中興北街188巷19號

電話:886-2-2995-0485

傳真:886-2-2995-7395

域名: liteconn.com

香港:九龍九龍灣啟祥道9號

信和工商中心9字樓52室

電話:852-2243 4211 傳真:852-2758 7189

網址:http://www.liteconn.com

深圳:深圳市寶安區松崗街道紅星西坊

大田洋工業園D區

電話:86-755-2962 6909~17

傳真:86-755-2962 6919~20

LITE 利慶科技(深圳)有限公司

LITETEK TECHNOLOGY (SHEN ZHEN) CO., LTD

樣品承認書

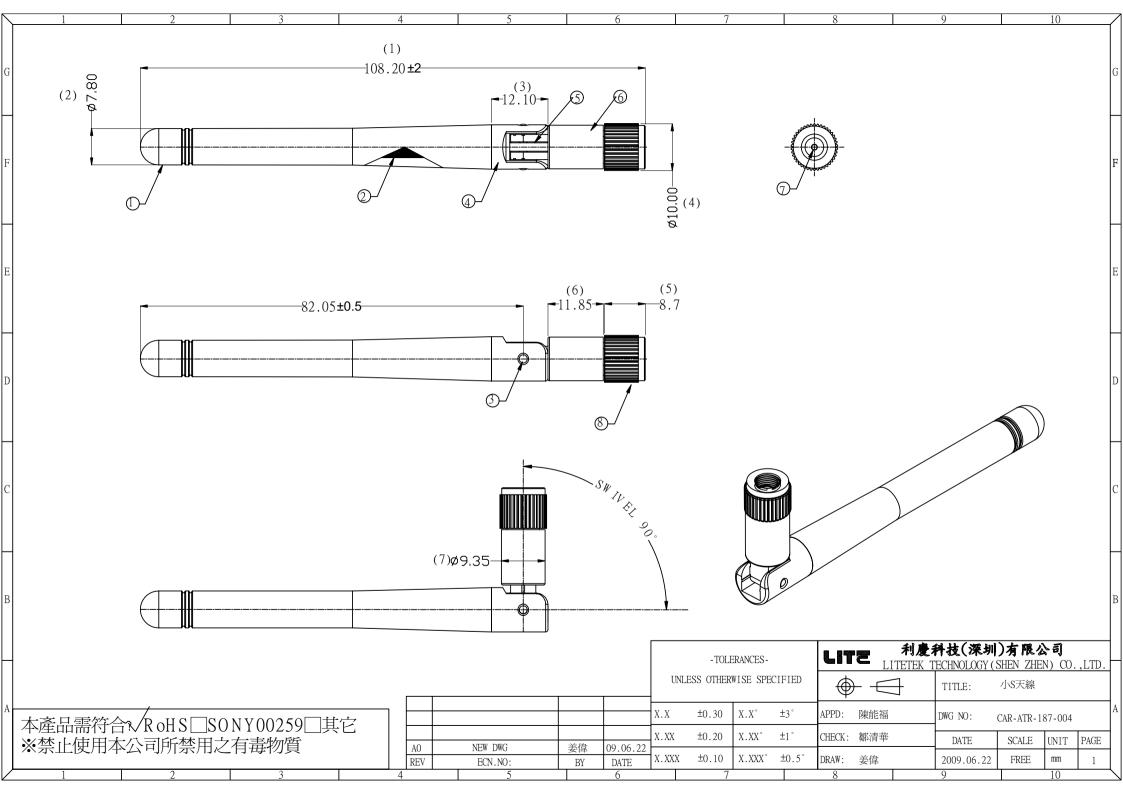
SAMPLE SPECIFICATION FOR APPROVAL

產品名稱: CAR-ATR-187-001

錄

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TECHNICAL DATA

Material/Finish:

Name	Material	Finish
Connector Shell	POM	None
Center PIN	BRASS	Gold Plated
Insulator	PTFE	None
Plastic	PC+ABS (White)	None
Plastic	TPE (White)	None

Electrical:

Frequency Range	2.4-2.5GHz
Nominal Impedance	50Ω
VSWR	2.0 MAX
Gain	1.6dBi MAX
Radiation	Omni
Polarization	Vertical

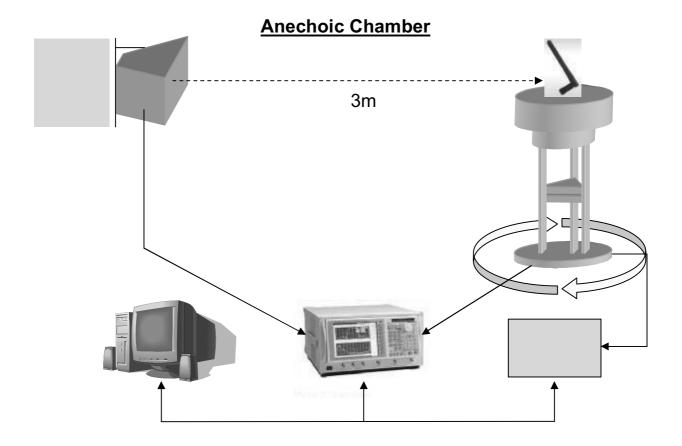
Mechanical & Environmental

Durability	500 Cycles MIN
Temperature Range	-55°C to +165°C
Relative Humidity	MIL-STD-202, method 106
Vibration	MIL-STD-202, method 213
Corrosion	MIL-STD-202, method 101



Antenna Testing Conditions:

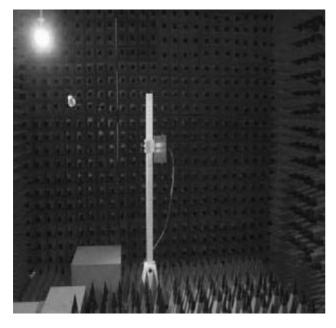
Radiation Pattern Testing



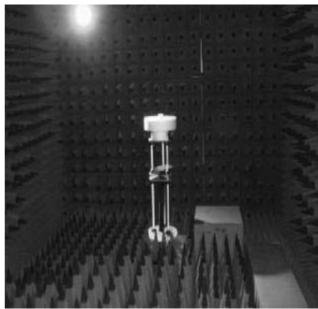


Anechoic Chamber

Standard Horn Antenna



Antenna Test



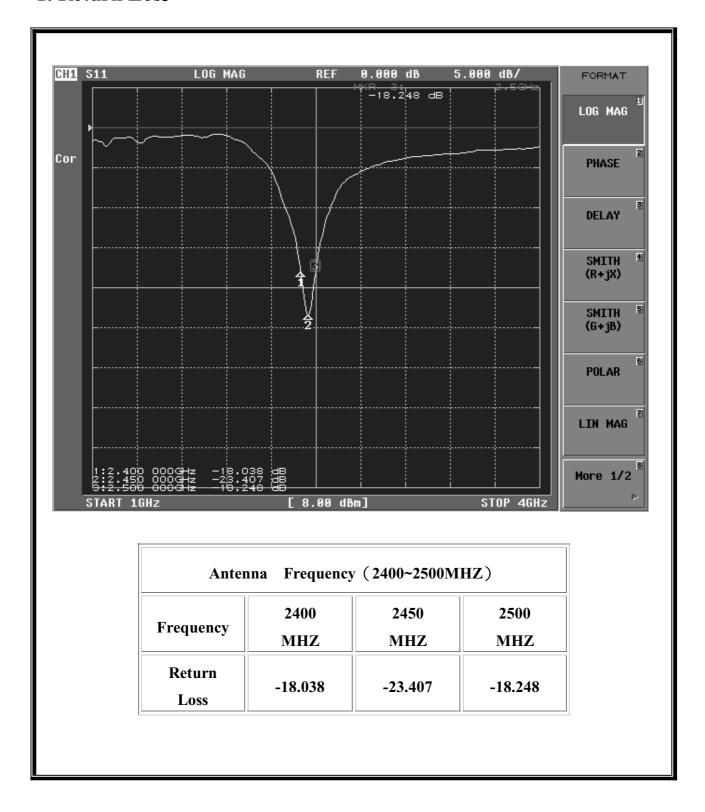


CONNECTOR & RF ANTENNA

THE YOUNGFOR CORPORATION

Antenna Electricity Characteristics:

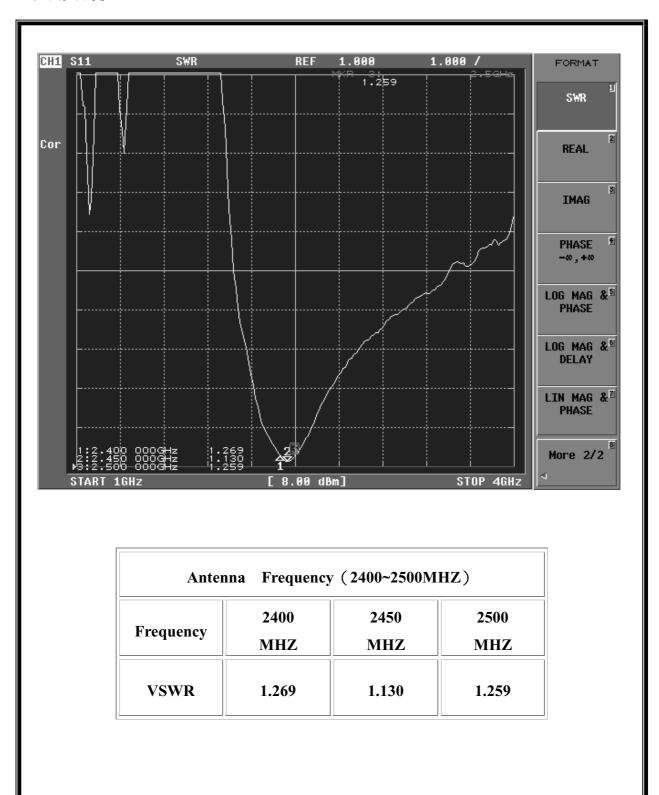
1. Return Loss:





CONNECTOR & RF ANTENNA

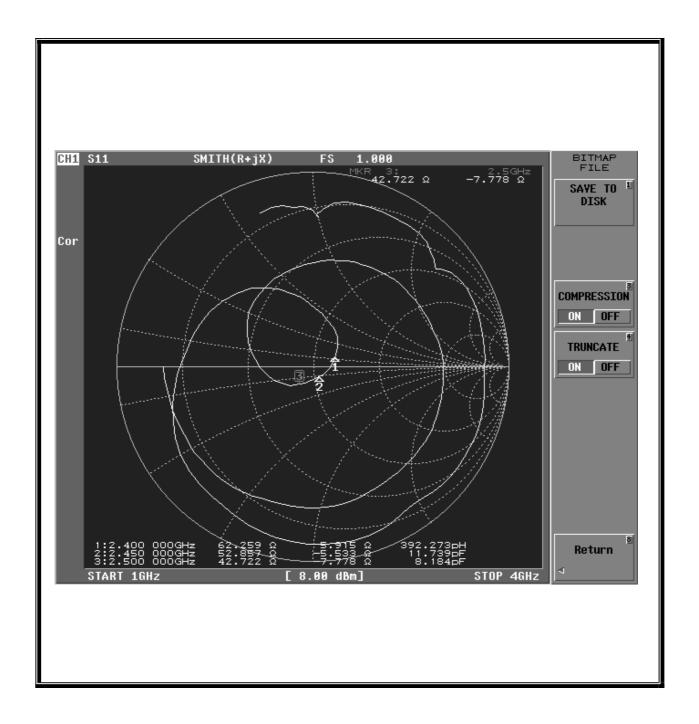
2. **VSWR**:





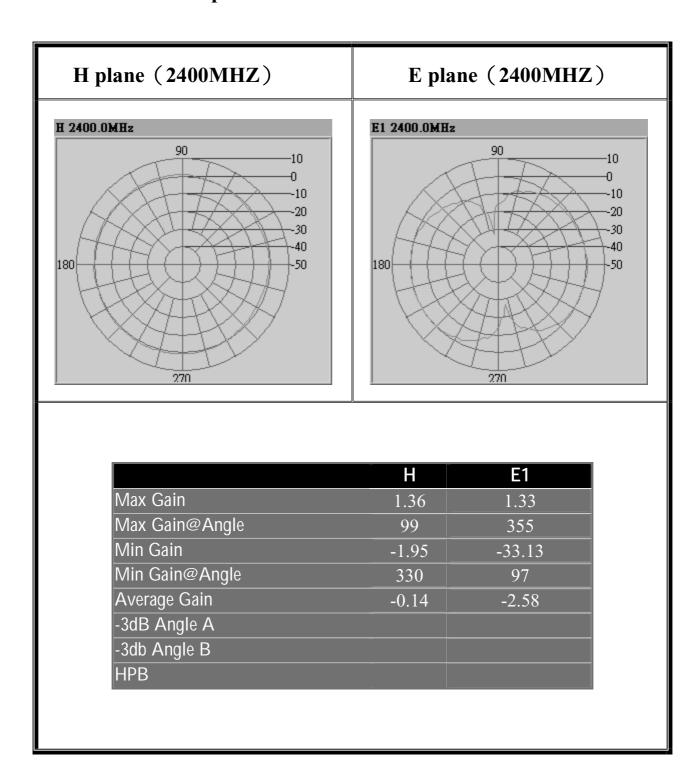
CONNECTOR & RF ANTENNA

3. Smith Chart:





Antenna Radiation pattern:



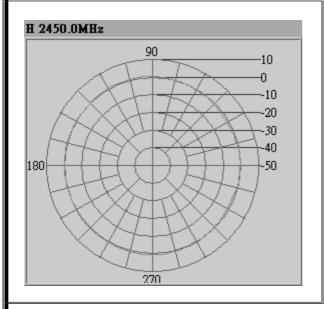


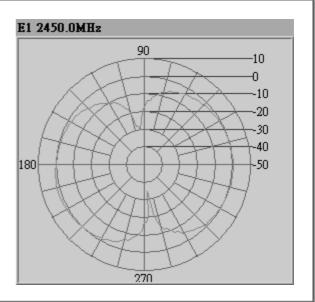
CONNECTOR & RF ANTENNA

THE YOUNGFOR CORPORATION

H plane (2450MHZ)

E plane (2450MHZ)





	Н	E1
Max Gain	1.43	1.2
Max Gain@Angle	275	198
Min Gain	-1.39	-34.33
Min Gain@Angle	30	277
Average Gain	-0.19	-2.23
-3dB Angle A		
-3db Angle B		
HPB		

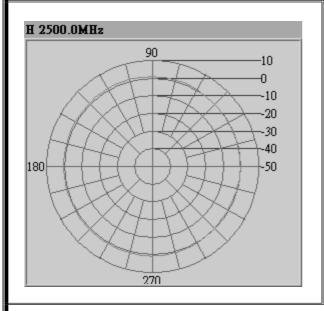


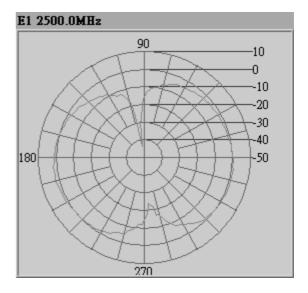
CONNECTOR & RF ANTENNA

THE YOUNGFOR CORPORATION

H plane (2500MHZ)

E plane (2500MHZ)





	Н	E1
Max Gain	1.23	1.59
Max Gain@Angle	99	196
Min Gain	-1	-43.71
Min Gain@Angle	332	99
Average Gain	0.18	-2.21
-3dB Angle A		
-3db Angle B		
HPB		

Shin Din Cable, Ltd.

Office Address: Unit 4101-11, 41/F., Metroplaza Tower 1, 223 Hing Fong Road Kwai Fong, N.T., Hong Kong Factory:

Engineering Department

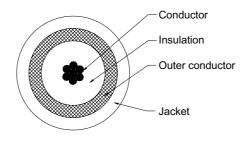
Tel: (86)-755-2765 3333 Fax: (86)-755-2765 3338

Date: Feb.27, 2008

Environmental Document for RF1.37

1. Product name and Configuration:

RF1.37 Coaxial Cable



2. Element table:

Product part	Material Name	Tested articles
Conductor	Silver plated copper wire	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs
Insulation	FEP: 5100J	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs
Outer conductor	Tinned plated copper wire	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs
Jacket	FEP: NP-101	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs
СМВ	BTH046 BK/ BTH040 GR /BTH047 WH	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs

CMB: Color Master Batch

3. Document list:

Product Part	Tested articles	SGS Report No.	Tested Date
Tinned copper wire	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs	EC406535100	2007-7-27
Silver plated copper wire	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs	SH7056525	2007-6-2
Insulation 5100J	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs	SH7074023	2007-7-11
Jacket NP-101	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs	SH7037378	2007-4-17
BTH046 BK	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs	EC407409708	2007-12-15
BTH040 GR	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs	EC407409705	2007-12-15
BTH047 WH	Cd, Pb, Hg, Cr ⁺⁶ , PBBs, PBDEs	EC407409711	2007-12-15

Prepared by: HuangDiao

Approved by: Yokoyama Katsuji

Shin Din Cable, Ltd.



Test Report No. EC408938903 Date: Dec 18 2008 Page 1 of 5

DAINICHISEIKA COLOR & CHEMICALS MFG. CO.. LTD. 7-6, BAKUROCHO 1-CHOME, NIHONBASHI, CHUO-KU, TOKYO 103-8383, JAPAN

The following sample was submitted and identified on behalf of the client as : FCM H 1374 GRAY

SGS Job No. : 1231578 Lot No : 18H-6298

Manufacturer : DAINICHISEIKA COLOR & CHEMICALS MFG. CO., LTD.

Country of Origin : JAPAN

Date of Sample(s) Received : DEC 10 2008
Testing Period : DEC 10 - 17 2008

Test Requested : Select test(s) as requested by client.

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

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

Conclusion : - Based on the performed tests on submitted sample, the results

comply with the RoHS Directive 2002/95/EC and its subsequent

amendments.

Signed for and on behalf of SGS Hong Kong Ltd.

Hui Ying Ngai, Alex Section Manager

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Test Report No. EC408938903 Date: Dec 18 2008 Page 2 of 5

Test Results:

ID for sample 1 : 4089389S003

Description for sample 1 : Grey Plastic Pellet

RoHS Directive 2002/95/EC

Test Item(s)	<u>Unit</u>	<u>Test Method</u>	Results	<u>MDL</u>	<u>Limit</u>
Cadmium(Cd)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES/ AAS	n.d.	2	100
Lead (Pb)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES/ AAS	12	5	1000
Mercury (Hg)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), Mercury Analyzer	n.d.	2	1000
Hexavalent Chromium (CrVI) by colorimetric method	mg/kg	IEC 62321/2ndCDV (111/95/CDV), UV-VIS	n.d.	2	1000
Sum of PBBs	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	-	1000
Monobromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Dibromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Tribromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Tetrabromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Pentabromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Hexabromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Heptabromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Octabromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Nonabromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Decabromobiphenyl	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Sum of PBDEs	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	-	1000
Dibromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Monobromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Tribromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Tetrabromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Pentabromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Hexabromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Heptabromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Octabromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Nonabromodiphenyl ether	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	
Decabromodiphenyl ether ##	mg/kg	IEC 62321/2ndCDV (111/95/CDV), GC-MS	n.d.	5	

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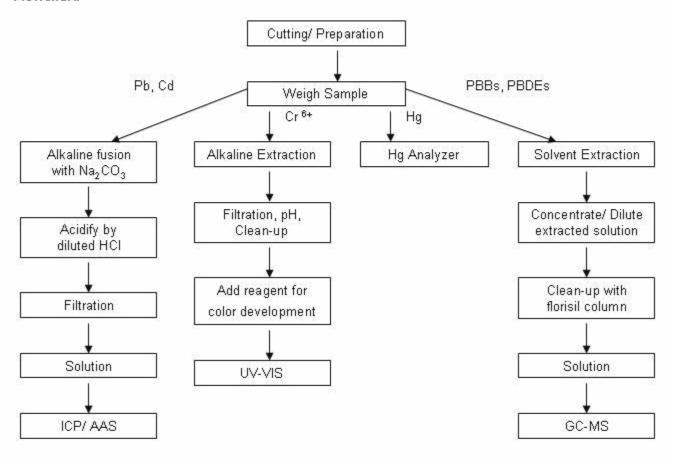


No. EC408938903

Date: Dec 18 2008

Page 4 of 5

Flowchart:



Note: 1) The Cd and Pb contents test on polymeric samples were dissolved totally by preconditioning method according to above flow chat.

Operator:	Chiu Kan Yuen (Alkaline Fusion)	
	Fok Chi Shan (Hg Analyzer)	
	Lam Ka Yung, Allen (Hexavalent Chromium)	
	Lau Chung Yin, Eric (PBBs and PBDEs)	- 6
Section Chief:	Hui Ying Ngai, Alex	

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Note:

(1) mg/kg = ppm; 0.1%wt = 1000ppm

- (2) n.d. = not detected
- (3) MDL = Method Detection Limit
- (4) ## = 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 will be included in the sum of PBDE after 01.07.2008
- (5) = Not regulated

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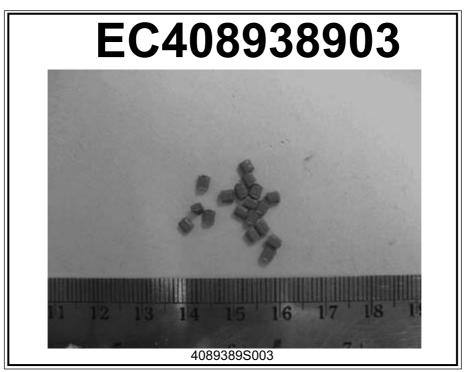


Sample photo:

No. EC408938903

Date: Dec 18 2008

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Test Report No. EC408259800 Date: Jul 16 2008 Page 1 of 4

SHIN DIN CABLE LIMITED UNIT 4101-4111, 41/F., METROPLAZA TOWER 1, 223 HING FONG ROAD, KWAI FONG,

HONG KONG

N.T.

The following sample was submitted and identified on behalf of the client as:

TINNED COPPER WIRE

SGS Job No. 1192148 Lot No CT7*37-2-2 Date of Sample(s) Received: JUL 10 2008 **Testing Period** JUL 10 - 15 2008

Test Requested Select test(s) as requested by client.

Test Method Please refer to next page(s).

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

Conclusion Based on the performed tests on submitted sample, the results

comply with the RoHS Directive 2002/95/EC and its subsequent

amendments.

Signed for and on behalf of SGS Hong Kong Ltd.

Leung Wai Yin Jessica Section Manager

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Test Report No. EC408259800 Date: Jul 16 2008 Page 2 of 4

Test Results:

ID for sample 1 : 4082598S001

Description for sample 1 : Metal w/ Silvery Plating (Base: Copppery Metal)

ROHS Test

Test Item(s)	<u>Unit</u>	Test Method	<u>Results</u>	<u>MDL</u>	<u>Limit</u>
Cadmium(Cd)	mg/kg	IEC 62321/ 2nd CDV (111/95/CDV), ICP-OES	n.d.	2	100
Lead (Pb)	mg/kg	IEC 62321/ 2nd CDV (111/95/CDV), ICP-OES	n.d.	5	1000
Mercury (Hg)	mg/kg	IEC 62321/ 2nd CDV (111/95/CDV), ICP-OES	n.d.	2	1000
Hexavalent Chromium (CrVI) by spot-test/		IEC 62321/2ndCDV (111/95/CDV)	Negative		#

boiling-water-extraction

Note:

(1) mg/kg = ppm; 0.1%wt = 1000ppm

(2) n.d. = not detected

(3) MDL = Method Detection Limit

(4) # : Positive means the presence of CrVI on the tested areas Negative means the absence of CrVI on the tested areas

(5) - = Not regulated

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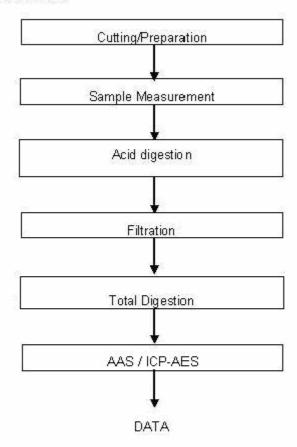


No. EC408259800

Date: Jul 16 2008

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Flowchart of Digestion for Cd and Pb Measurement Method: IEC 62321/ 2nd CDV111/95/CDV



The samples were dissolved totally by pre-conditioning method according to above flow chart.

Operator: Chiu Kan Yuen

Section Chief: Leung Wai Yin, Jessica

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Sample photo:

No. EC408259800

Date: Jul 16 2008

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Test Report Page 1 of 4 No. SH9089475-1/CHEM Date: May. 27, 2009

SHANGHAI YINMU ELECTRONICS MANUFACTURE CO., LTD NO.15 HUAGONG RD, SONGJIANG, SHANGHAI

THIS REPORT IS TO SUPERSEDE TEST REPORT NO.SH9089475/CHEM DATE: 2009/05/16

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

: COPPER WIRE PLATED SILVER Sample Name

SGS Ref No. : 11834659-1

Sample Receiving Date: May.13, 2009 **Testing Period** : May.13-16, 2009

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

Test Method : (1) With reference to IEC 62321:2008 for Cadmium content.

Analysis was performed by ICP

(2) With reference to IEC 62321:2008 for Lead content.

Analysis was performed by ICP

(3) With reference to IEC 62321:2008 for Mercury content.

Analysis was performed by ICP.

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

Colorimetric Method.

Test Results : Please refer to next pages

Signed for and on behalf of SGS-CSTC Chemical Laboratory

Maro

Sandy Hao Lab Manager

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(i). Lit | 3rd Building, No. 889, Yishan Road, Shanghai, China 中国 -上海 - 宮山路889号3号楼

200233 邮箱: 200233

IESE (86-21) 61402553 IESE (86-21) 64963679

HL185-21) 61402594 HL(06-21) 54500363 + sgs.china@sgs.com



No. SH9089475-1/CHEM

Date: May. 27, 2009

Page 2 of 4

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

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

Test Part Description:

Silvery metal wire

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) "-" = Not Regulated
- (6) The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2002/95/EC

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(i). Lit | 3rd Building, No. 889, Yishan Road, Shanghai, China 中国 -上海 - 宮山路889号3号楼

邮箱: 200233

200233 ESE (86-21) 61402553 ESE (86-21) 64963679 HL185-21) 61402594 HL(06-21) 54500363 + sgs.china@sgs.com



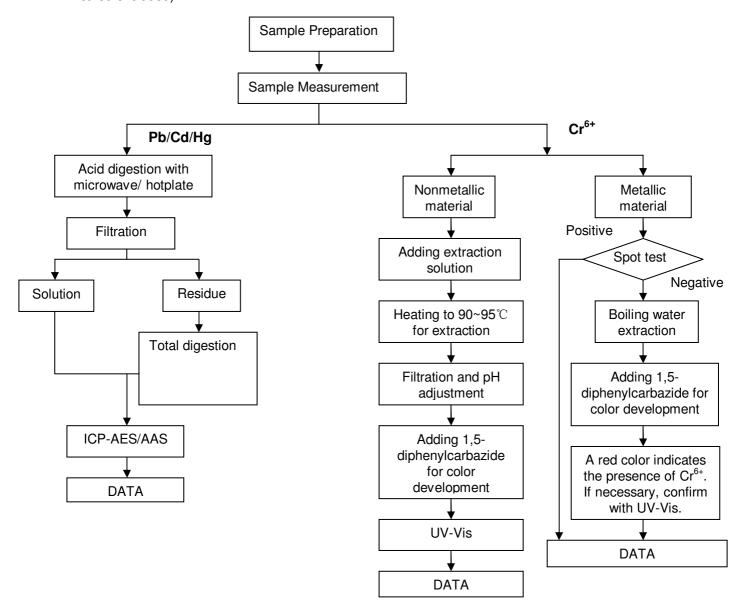
No. SH9089475-1/CHEM

Date: May. 27, 2009

Page 3 of 4

ATTACHMENTS

- 1) Name of the person who made measurement: Jeff Zhang/Chaven Lian/Frank Fang
- 2) Name of the person in charge of measurement: Terry Wang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)



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No. SH9089475-1/CHEM

Date: May. 27, 2009

Page 4 of 4

Sample photo:

SGS



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*** End of Report ***

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Ordings at the time of its intervention sety and within the limits of Client's Instructions, if any. The Company's sale responsibility is to its Client and this expectate parties to a transaction from exercising at their regims and odligators under the transaction documents. Any unauthorized attention, forgery or protection of the following the document is unliawful and offenders may be prosecuted to the fullest extent of this law.

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邮箱: 200233

200233 ESE(86-21)61402553 ESE(86-21)64963679



PC/ABS Plastic Alloy





产品介绍

LUPOY PC/ABS 的合金,它结合了PC的超强冲击性能,热稳定性能和ABS的加工延展性能. LUPOY HP-5004 是具有高冲击和热稳定性能的非增强 PC/ABS 合金,其良好的延展性和加工加工性能适用于电子电气和汽车产品.

典型特性

性能	单位	测试方法	HP-5004
物理性能			
比重	-	ASTM D792	1.14
模缩系数"	%	-	5~8
MI, 250°C 2.16kg	g/10min	ASTM D1238	3-6
机械性能			
拉伸强度(屈服)	Kgf/cm²	ASTM D638	545
断裂伸长率	%	ASTM D638	>100
弯曲强度	Kgf/cm²	ASTM D790	900
弯曲模量	Kgf/cm²	ASTM D790	23,000
Izod缺口冲市强度 23℃ -30℃	Kgfcm/cm Kgfcm/cm	ASTM D256 ASTM D256	65 50
硬度 R	-	ASTM D785	111
热性能			
HDT, 264psi, 0.250"	${\mathbb C}$	ASTM D648	115
维卡软化点	${\mathbb C}$	ASTM D1525	-



加工指南

干燥

● 如果树脂含有较高的水分,会造成制品出现银纹等表面缺陷和使制品的机械性能下降.所以,为了确保制品有最优的性能和预防表面缺陷的出现 LUPOY HP-5004在成型前一定要预干燥,对于LUPOY HP-5004,干燥条件为:温度80~100℃,时间3~4小时.

成型温度&加工条件

位置		成型温度	
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	后部	230 ~ 240℃	
料筒. 	中部	240 ~ 250℃	
	前部	250 ~ 260 ℃	
喷嘴		250 ~ 260℃	
模温		40 ~ 80 ℃	
第一		600 ~ 1,200 kg/cm²	
> 新尼士	第二 500~1,000 kg/cm²		
注射压力		10 ~40 kg/cm²	
保压		40~80%最大注射压力	
螺杆RPM		40 ~80	



注塑速度

● 注射速度和注射压力依据树脂的类型和制品的性质而有所不同. 在注射速度控制阶段,当注射速度的设定值确定时,注射压力必须足够高,以确保注射速度不会低于其设定值..一般推荐使用高的注射速度,但为了避免制品在浇口位置产生表面缺陷,在注射开始时以低速为宜.在保压阶段之前降低注射速度,有利于保持压力平稳和防止熔体的回流

•

● 推荐注塑速度过程

慢-->快-->慢--> 切换到保压阶段

慢: 25 ~ 50% 快: 50 ~ 75%

保压

当制品在模具中冷却时,会发生体积收缩,保压是为了补偿制品的体积收缩.保压要保持至熔体在浇口位置充分凝结.保压时间的长短可通过测量制品的重量来确定.

螺杆速度RPM

● 螺杆速度取决于外围设备的速度。如果外围设备的速度过大会造成加工问题。推荐的螺杆速度RPM是40到80。



耐化学品性能

● 热塑性塑料的耐化学品性能是指材料在一定的温度压力下,与化学品接触一段时间所受的影响. 图 1显示了LUPOY HP-5004的耐化学品的性能, PC/ABS 树脂有着优良的耐稀酸,植物油和矿物油性能.但对于芳环族,脂类,丙酮和氯化物,会产生膨胀和开裂.

图 1. LUPOY HP-5004 耐化学品性能

化学品		保持率			
		拉伸强度(屈服)	拉伸 模量	断裂伸长率	
醋酸 (5%)		94	88	95	
丙酮		o (溶解)	o (溶解)	o (溶解)	
汽车刹车油		74	85	42	
汽车防冻液		88	84	70	
醋酸丁脂		54	80	2	
柴油		90	98	75	
醋酸乙二脂		95	98	98	
汽油		82	99	50	
WD40 (喷雾剂)		100	100	100	
甲醇		85	92	72	
甲乙酮		o (溶解)	o (溶解)	o (溶解)	
甲苯		o (溶解)	o (溶解)	o (溶解)	
二甲苯		30	60	20	
烧碱 (10%)		85	100	82	
硫酸 (5%)		98	81	100	
水	23°C	97	99	99	
	85℃	80	96	30	

LG CHEMICAL (GUANGZHOU) ENGINEERING PLASTICS CO LTD

1 YECHENG 1ST RD EAST SEC OF ECONOMIC & TECH DEV DIST GUANGZHOU GUANGDONG 510760 CN

Material Designation: HP-5004, HP5004HF, HP5004(m)(#)

Product Description: Acrylonitrile Butadiene Styrene/Polycarbonate (ABS/PC), designated "Lupoy" furnished as pellets.

IEC GWFI					
IEC GWIT		IEC Ball Pressure (°C): -	Dimensional Stability(%): -	150 Heat Deflection (°C): -	ISO Charpy Impact (KJ/m²):
RTI	09				
RTI	09				
RTI	09	D495:			
HAI	4	_	ohm-cm):	MPa): -	- 4
HWI HAI RTI Elec	,		dvity (10°	trength (act (kl/m²
Flame	HB	HVTR: -	Volume Resistivity (10°ohn	ISO Flexural Strength (MPs)	ISO Izod Impact (k
mm)					
hick. (0.75	- :(A			
Min. Thick. (mm)		IEC CTI (v): -	th (kV/mm): -	gth (MPa): -	ct (k1/m²): -
Color	ALL	CTI: -	Dielectric Strength (kV/mm):	ISO Tensile Strength (MPa):	ISO Tensile Impact (kJ/m²):

May be followed by 1 or 2 suffix letters from A-2 incl. except F, FF.

(m) denotes the letters of S, L, A, M, H and ML.

Report Date: 11/10/2004

Underwriters Laboratories Inc®

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULI.



TEST REPORT

NUMBER: SZHH0023255101

APPLICANT: LG CHEMICAL (GUANGZHOU) ENGINEERING DATE: Apr 11, 2008

PLASTICS CO., LTD.

NO.1,1ST YECHENG ROAD, EASTERN SECTION OF ECONOMIC TECHNOLOGICAL

DEVELOPMENT DISTRICT,

GUANGZHOU, PRC

ATTN: ZHU XUE ZHEN

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE SEMI-TRANSPARENT PLASTIC GRANULE (LUPOY HP5004-NPI).



TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S) ************************

AUTHORIZED BY:

FOR INTERTEK TESTING SERVICES

SHENZHEN LTD.

BEN N.L. GENERAL MANAGER



TEST REPORT

NUMBER: SZHH0023255101

TESTS CONDUCTED

(A) TEST RESULT SUMMARY :

TESTING ITEM	RESULT
CADMIUM (Cd) CONTENT (mg/kg)	ND(<2)
LEAD (Pb) CONTENT (mg/kg)	ND(<2)
MERCURY (Hg) CONTENT (mg/kg)	ND(<2)
CHROMIUM (VI) (Cr ⁵⁺) CONTENT (mg/kg) (FOR NON-METAL)	ND (<1)
POLYBROMINATED BIPHENYLS (PBBs) (mg/kg)	
MONOBROMOBIPHENYL (MonoBB)	ND(<5)
DIBROMOBIPHENYL (DiBB)	ND(<5)
TRIBROMOBIPHENYL (TriBB)	ND (<5)
TETRABROMOBIPHENYL (TetraBB)	ND (<5)
PENTABROMOBIPHENYL (PentaBB)	ND(<5)
HEXABROMOBIPHENYL (HexaBB)	ND(<5)
HEPTABROMOBIPHENYL (HeptaBB)	ND(<5)
OCTABROMOBIPHENYL (OctaBB)	ND(<5)
NONABROMOBIPHENYL (NonaBB)	ND(<5)
DECABROMOBIPHENYL (DecaBB)	ND (<5)
POLYBROMINATED DIPHENYL ETHERS (PBDEs) (mg/kg)	
MONOBROMODIPHENYL ETHER (MonoBDE)	ND(<5)
DIBROMODIPHENYL ETHER (DIBDE)	ND(<5)
TRIBROMODIPHENYL ETHER (TriBDE)	ND(<5)
TETRABROMODIPHENYL ETHER (TetraBDE)	ND (<5)
PENTABROMODIPHENYL ETHER (PentaBDE)	ND (<5)
HEXABROMODIPHENYL ETHER (HexaBDE)	ND(<5)
HEPTABROMODIPHENYL ETHER (HeptaBDE)	ND(<5)
OCTABROMODIPHENYL ETHER (OctaBDE)	ND(<5)
NONABROMODIPHENYL ETHER (NonaBDE)	ND(<5)
DECABROMODIPHENYL ETHER (DecaBDE)	ND(<5)

CHEMIST: LV LINNA

mg/kg = MILLIGRAM PER KILOGRAM = ppm

< = LESS THAN

ND = NOT DETECTED

NOTE : DecabDE IN POLYMERIC APPLICATIONS IS EXEMPTED ACCORDING TO ROHS

DIRECTIVE AMENDMENT 2005/717/EC.



TEST REPORT

NUMBER: SZHH0023255101

TESTS CONDUCTED

(B) ROHS REQUIREMENT

RESTRICTED SUBSTANCES	LIMITS		
CADMIUM (Cd)	0.01% (100 ppm)		
LEAD (Pb)	0.1% (1000 ppm)		
MERCURY (Hg)	0.1% (1000 ppm)		
CHROMIUM (VI) (Cr ⁵⁺)	0.1% (1000 ppm)		
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000 ppm)		
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000 ppm)		

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

(C) TEST METHOD :

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 -111/95/CDV, BY ACID DIGESTION AND DETERMINED BY ICP- OES	2 mg/kg
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 -111/95/CDV, BY ACID DIGESTION AND DETERMINED BY ICP - OES	2 mg/kg
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 -111/95/CDV, BY ACID DIGESTION AND DETERMINED BY ICP - OES	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR NON-METAL)	WITH REFERENCE TO IEC 62321 -111/95/CDV, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	1 mg/kg
POLYBROMINATED BIPHENYLS (PBBs)& POLYBROMINATED DIPHENYL ETHERS (PBDEs)	WITH REFERENCE TO IEC 62321 - 111/95/CDV, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS AND HPLC CONFIRMATION WHEN NECESSARY	5 mg/kg

NOTE: TESTS WERE CONDUCTED WITH REFERENCE TO 111/95/CDV VERSION 2007-10-12 WHICH IS STILL A DRAFT METHOD AND SUBJECT TO FUTURE CHANGES PRIOR TO PUBLICATION.

DATE SAMPLE RECEIVED : APR 08, 2008 TESTING PERIOD : APR 08, 2008 TO APR 10, 2008

END OF REPORT

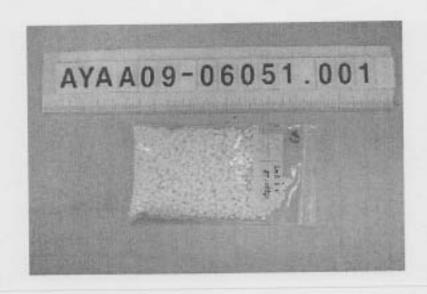


Test Report No. F690501/LF-CTSAYAA09-06051

Issued Date: March 10, 2009

Page 3 of 3

Picture of Sample as Received:



*** 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) Negative = Undetectable / Positive = Detectable

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Market of the 2010 forms (Sanda Tierress de Burrellette)

Injection Condition LG Chemical Keyflex BT TPEE

Drying, Injection and Hold pressure

Drying

Above the melting point, excess moisture causes hydrolytic degradation of the polymer.

The moisture content shold be less than 0.1%.

Effective drying with such ovens take place in 3~4 hrs at 80~90 C(or 90~100 C), 7~8 hrs at 60~70°C (or 70~80°C).

Drying Condition	Grade
60~70°C (7~8 hrs) 80~90°C (3~4 hrs)	1028D, 1030D, 1033D, 1035D, 1040D, 1045D, 1140D, 1145D, 3140D, 1245D
70~80°C (7~8 hrs) 90~100°C (3~4 hrs)	1047D, 1055D, 1063D, 1068D, 1072D, 1155D, 1163D, 1172D, 1182D

Injection and Hold pressure

The hold pressure is typically held constant with sufficient time and pressure to optimize dimensions and appearance. High pressure will reduce the apparent mold shrinkage, but The injection pressure should be set to the minimum pressure required for filling the cavity. increase flash.

Minimize thermal degradation during metering & filling processes.

Efficient designing gas vent at flow-end.

Injection molding condition

Table 15. Injection molding condition



Screw speed: 40-80rpm

	Mold	Nozzie	Front	Middle	Rear	Hopper
1028D	10~35	190-200	190-200	180~190	180~190	170~180
1030D	10-35	195-205	195~205	185-195	185-195	175-185
1033D	10-35	200-210	200-210	190-200	190~200	180~190
1035D	10-35	195-205	195-205	195-205	195~205	185~195
1040D(1140D)*	10-35	200-210	200-210	190-200	190~200	180~190
1045D(1145D)*	20-40	205-215	205-215	195~205	195~205	185~195
1047D	20-40	210-220	210-220	200-210	200~210	190~200
1055D(1155D)*	30-50	215-225	215-225	205-215	205-215	195~205
1063D(1163D)*	30-60	220-230	220-230	210-220	210-220	200-210
1068D	30-60	225-235	225-235	215-225	215-225	205-215
1072D(1172D)*	30-60	230-240	230-240	220-230	220-230	210-220
1182D*	30-60	230-240	230-240	220-230	220-230	210-220

Injection molding condition of Keyflex BT could be altered by the kind of injection machine, the mold structure, and the shape of product.

All Keyflex BT extrusion grades (1100 series) are also available for injection molding.



QMFZ2 Component - Plastics

Friday, October 24, 2003

E67171

LG CHEMICAL LTD

20 YOIDO-DONG YONGDUNGPO-GU SEOUL 150-721 KR

Material Designation: BT-1055D

Product Description: Thermoplastic Elastomer (TPE), designated "KEYFLEX" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
NC, BK	1.5	НВ	3	0	50	50	50	-	-
	3.0	НВ	3	0	50	50	50	-	-
CTI: 0	IEC CTI (V): -	HVTR : 0			D495:	5		IEC Ball Pressure (${\mathbb C}$): -	
Dielectric Strength (k)	V/mm): -	Volume Resist	i vity (10 ^x c	ohm-cm):	-			Dimensional Stability(%): -	
ISO Tensile Strength	(MPa): -	ISO Flexural S	trength (N	/IPa): -				ISO Heat Deflection (\mathfrak{C}) : -	
ISO Tensile Impact (k.	J/m²): -	ISO Izod Impa	ct (kJ/m²):	-				ISO Charpy Impact (kJ/m²): -	

Report Date: 6/11/2002 Underwriters Laboratories Inc®

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULI.

FRX 10. :033282515

ROM

宫 前 五 金 股 份 有 限 公 司

檢驗報告表

編號:910707

91年7月2日

咨	F	萬鄉打限公	育		
品	名	FREE CUITIN	G BRASS ROD	· 决, 2.0,2.3,3.18, 大, 12.7,	1.5,4.0,12.0 m/m 13.0 m/m
规	格	JIS H3250 C30	504 BD	* - * - * - * - * - * - * - * - * - * -	٠.
項目	数 雄	標準值	實測值	備	註
化	Си	57:0 - 61.0	58.20		
學	pb	1.8 - 3.7	3.00		
成	Fe	< 0.5			
份	Sn+Fe	< 1.2	0.71	TE SON	
%	Zn	REMAINDER	REMAINDER	C TELARIXXX	
. 127.		*	+41		Elb.
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Test Report No. F690501/LF-CTSAYAA09-06051

Issued Date: March 10, 2009

Page 2 of 3

Sample No.

: AYAA09-06051.001

Sample Description

: KEYFLEX BT1055D

Item No./Part No.

: N/A.

Heavy Metals

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

Flame Retardants-PB8s/PBDEs

Test items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Dibromobiphenyl	mg/kg	With reference to IEC 62321 2006, GC-MS	5	N.D.
Tribromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Pentabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Hexabromobiphenyl	mg/kg	With reference to IEC 62321 2006. GC-MS	5	N.D.
Heptabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Octabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	ND
Nonabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Decabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321:2006. GC-MS	5	N.D.
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321:2006. GC-MS	5	N.D.
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321 2006, GC-MS	5	N.D.
Tetrabromodiphenyl ether	rng/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321-2006, GC-MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321-2008, GC-MS	5	N.D.
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321 2008, GC-MS	5	N.D.
Decabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008. GC-MS	6	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) Negative = Undetectable / Positive = Detectable

The country of word is the total or the country of the country of



Test Report No. F690501/LF-CTSAYAA09-06051

Issued Date March 10, 2009

Page 1 of 3

To:

LG CHEM. LTD.

70-1

Hwachi-dong

Yeasu-city

JEONNAM

Korea

The following merchandise was submitted and identified by the client as

Product Name

: KEYFLEX BT1055D

SGS File No.

: AYAA09-06051

Received Date

: March 05, 2009

Test Performing Date

± March 06, 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

The parameter is separated by Control (the parameter of process of the parameter of the par



南铜实业有限公司产品质量合格证

编号: 11-9

2007年11月14日

		牌号	Hpb59-1	规格	4	ф6	门市	do it
	化	学	成	份	%			寮步
铜 (CU)	铁	镍	铅	任	70		量)	/
58.9	(Fe)	(Ni)	(Pb)	(Mn)	(Si	200	铝 (AI)	舜 (Zn)
30.9	0.197	0.186	2.37	0.0089	0.2	74	0.0904	余量
	カ	学 性	能				14 N	不無
抗拉强度, c N/mm ²	b	延伸率,δ		硬度值 HRB	1	138	温椒	
437.5	. 100	9.5		76		1	质检章	1
金融员:	夢		质检员:	融 名。	16	技术局	量部: 以	



6

TEST REPORT

NUMBER: SZHH0028022602

APPLICANT: DONGGUAN CITY LIAOBU LUXIN HARDWARE DATE: Jul 28, 2008

FACTORY

XINJIUWEI CITY GULOULING STREET NO.62, LIAOBU TOWN DONGGUAN CITY, GUANGDONG PROVINCE, CHINA

ATTN: MS LEI

SAMPLE DESCRIPTION:

以下測試樣品乃供應商所提供及確認:

ONE (1) SUBMITTED SAMPLE SAID TO BE GOLD COLOR METAL SHAFT.

樣品名稱 SAMPLE DESCRIPTION : 黄铜棒, 块 (本体) C3604/HPB59-1.

原產地 REGION OF ORIGIN

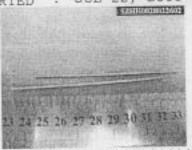
: CHINA.

買家名稱 BUYER'S NAME

: DELTA.

工廠名稱 FACTORY'S NAME : 路鑫五金.

收件日期 DATE SAMPLE RECEIVED : JUL 21, 2008. 開始測試日期 DATE TEST STARTED : JUL 22, 2008



測試執行 TEST CONDUCTED:

依申請商之要求, 細節請參考附頁.

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

AUTHORIZED BY:

FOR INTERTEK TESTING SERVICES

SHENZHEN LTD.

BEN N.L. LIN GENERAL MANAGER



NUMBER: SZHH0028022602

TESTS CONDUCTED

(A) TEST RESULT SUMMARY 測試結果:

TESTING ITEM 測試項目	RESULT 结果
CADMIUM (Cd) CONTENT 編含量 (mg/kg)	14
LEAD (Pb) CONTENT 鉛含量 (mg/kg)	17600
MERCURY (Hg) CONTENT 汞含量 (mg/kg)	ND(<2)
CHROMIUM (VI) (Cr6+) RESULT (FOR METAL) 六價鉻結 果(金屬材質)(mg/kg with 50cm²)#	NEGATIVE(<0.02)

CHEMIST: LV LINNA

REMARKS: mg/kg = MILLIGRAM PER KILOGRAM 毫克每千克

備註:

mg/kg with 50cm2 = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETRE

毫克每千克 (50 平方釐米)

ND = NOT DETECTED 未檢測出

< = LESS THAN 小於

SAMPLES WERE RANDOMLY SELECTED FOR TEST 測試樣品隨機選取

= ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF Cr(VI). IT IS THE Cr(VI) CONCENTRATION DETECTED IN THE BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.依據IEC 62321, 如果測試結果呈陽性,表明六價鉻的存在。這種現象只表明在沸水抽提液中檢測到了六價鉻。而不應認爲是樣品鍍曆中的六價鉻含量。

DATE SAMPLE RECEIVED

收到樣板時間

: JUL 22, 2008 : 2008年07月22日

TESTING PERIOD 測試周期

JUL 22, 2008 TO JUL 26, 2008 2008年07月22日 至 2008年07月26日



NUMBER: SZHH0028022602

TESTS CONDUCTED

(B) TEST METHOD 測試方法:

TESTING ITEM 測試項目	TESTING METHOD 測試方法	REPORTING LIMIT 報告種限
CADMIUM (Cd) CONTENT 紹含量	WITH REFERENCE TO IEC 62321-111/95/CDV, BY ACID DIGESTION AND DETERMINED BY ICP-DES (SEE NOTE). 参考IEC 62321-111/95/CDV, 以酸消解 业用電感耦合等離子體原子發射光譜儀分析(見注釋)。	2 mg/kg
LEAD (Pb) CONTENT 紹含量	WITH REFERENCE TO IEC 62321-111/95/CDV, BY ACID DIGESTION AND DETERMINED BY ICP-OES (SEE NOTE). 参考IEC 62321-111/95/CDV, 以酸消解並用電感耦合等維子體原子發射光譜儀分析(見注釋)。	2 mg/kg
MERCURY (Hg) CONTENT 永含量	WITH REFERENCE TO IEC 62321-111/95/CDV, BY ACID DIGESTION AND DETERMINED BY ICP-DES (SEE NOTE). 参考IEC 62321-111/95/CDV, 以酸消解 並用電感耦合等離子體原子發射光譜儀分析(見注釋)。	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR METAL) 六價絡含量(金屬材質)	WITH REFERENCE TO IEC 62321 -111/95/CDV, BY BOILING WATER EXTRACTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER (SEE NOTE). 參考IEC 62321 -111/95/CDV,以沸水萃取並用可見光-紫外光分光光度計分析(見注釋)。	0.02mg/kg WITH 50cm ²

REMARK REPORTING LIMIT = QUANTITATION LIMIT OF ANALYTE IN SAMPLE

報告種限 = 測試標品之定量偵測極限 備註:

TESTS WERE CONDUCTED WITH REFERENCE TO 111/95/CDV VERSION 2007-10-12 NOTE

WHICH IS STILL A DRAFT METHOD AND SUBJECT TO FUTURE CHANGES PRIOR TO 注釋:

PUBLICATION.

本測試是參考111/95/CDV VERSION 2007-10-12, 此方法仍然是草稿, 在公佈之前還可能

會有改動。



NUMBER: SZHH0028022602

TESTS COMPUCTED

- C MEASUREMENT FLOWCHART 测試流程例:
- 1. TEST FOR Cd/Pb CONTENTS 納/紹含量的測試:

D

PUT WEIGHED SAMPLE INTO A SUITABLE VESSEL 把稱好的樣品放入合 適的容器內 ADD SUITABLE ACID 加入合適的酸 DIGEST SAMPLE IN VESSEL 消解樣品

D

 \Diamond

0

ANALYZE BY ICP-OES 用 ICP-OES 分析 MAKE UP WITH DEIONIZED WATER 用去離子水定容 TRANSFER THE
DIGESTED SOLUTION
INTO A VOLUMTRIC
FLASK
轉移消解溶液入容量瓶

2. TEST FOR Hg CONTENT 汞含量的測試:

PUT WEIGHED SAMPLE INTO A MICROWAVE DIGESTION VESSEL 把稱好的樣品放入微波 消解罐内 CONCENTRATED NITRIC ACID, FLUOROBORIC ACID AND HYDROGEN PEROXIDE WERE ADDED 加入濃硝酸,氣 硼酸和過氧化氢

DIGEST SAMPLE IN MICROWAVE DIGESTION VESSEL 消解樣品

ANALYZE BY ICP-OES. 用 ICP-OES 分析 MAKE UP WITH DEIONIZED WATER 用去離子水定容

TRANSFER THE DIGESTED SOLUTION INTO A VOLUMTRIC FLASK 轉移消解溶液入容量瓶

П



NUMBER: SZHH0028022602

TESTS CONDUCTED

3. TEST FOR CHROMIUM (VI) CONTENT (BOILING WATER EXTRACTION) 六價鉻含量的測試 (沸水提取);

MEASURE SURFACE AREA OF TEST SAMPLE 量好測試樣品的表 而精

PUT THE SAMPLE INTO A SUITABLE VESSEL WITH BOILING DEIONIZED WATER, TOTALLY IMMERSE THE SAMPLE AND HEAT 10 MINS 把樣品放入裝預沸騰的去離子水的合適容器中,使標品完全浸泡並加熱10分鐘

COOL THE BEAKER AND ITS CONTENT TO ROOM TEMPERATURE 冷卻容器和溶液至室溫

U

ANALYZE THE MIXTURE BY USING UV-VIS SPECTROPHOTOMETER WITH WAVELENGTH SET AT 540 nm 用紫外-可見分光光度計, 在540 nm 下分析

ADD ORTHOPHOSPHORIC ACID SOLUTION AND DIPHENYLCARBAZIDE SOLUTION 加正磷酸溶液 和二苯卡巴肼

MAKE UP WITH DEIONIZED WATER 用去離子水定容

END OF REPORT



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



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	-	IEC 62321/2nd CDV (111/95/CDV), UV-Vis	Negative	\Diamond
boiling water extraction				

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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Test Report

No. CANEC0805640301

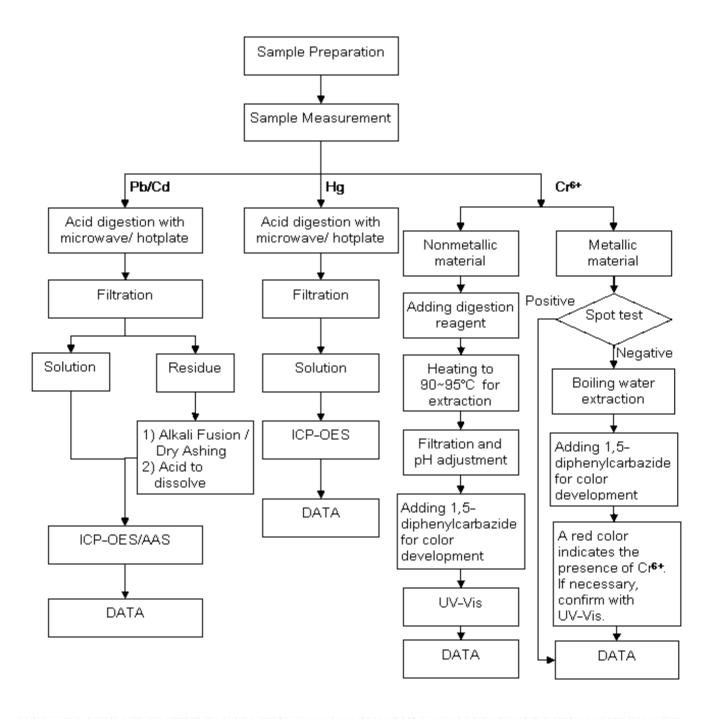
Date: 24 Oct 2008

Page 3 of 4

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:



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ontention appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.
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Test Report No. CANEC0806700101 Date: 12 Dec 2008 Page 1 of 4

SHENZHEN DONGHAOYUAN MACHINE & ELECTRICS SCIENCE-TECHNOLOGY CO.,LTD. 39 BILK,5 ZONE, CUIGANG INDUSTRIAL PARK, HUAIDE, FU YONG BAOAN, SHENZHEN **CHINA**

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

镍/金镀层

11478899 - SZ SGS Job No.

Buyer 东浩源

Client Reference Information: MATERIAL:镍,金

SGS Internal Reference No. : 5.2

Date of Sample Received 08 Dec 2008

Testing Period 08 Dec 2008 - 12 Dec 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).

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.

Huang Fang, Sunny Sr. Engineer

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Test Report No. CANEC0806700101 Date: 12 Dec 2008 Page 2 of 4

Test Results:

: CAN08-067001.002 ID for specimen 1 Description for specimen 1 : Golden piece (plating)

RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC 62321/2nd CDV (111/95/CDV), ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by	-	IEC 62321/2nd CDV (111/95/CDV), UV-Vis	Negative	\Diamond	#
boiling water extraction					

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. # = 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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Test Report

No. CANEC0806700101

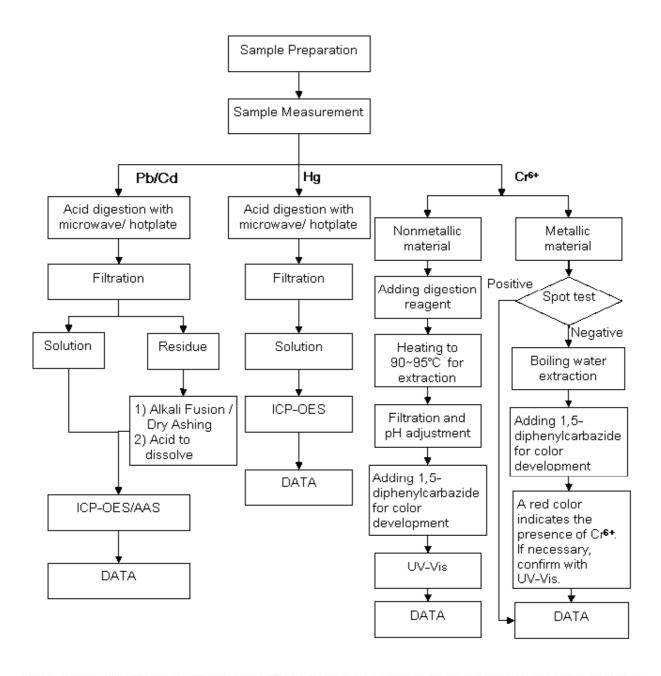
Date: 12 Dec 2008

Page 3 of 4

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. CANEC0806700101

Date: 12 Dec 2008

Page 4 of 4

Sample photo:



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2	項目	報送值	单位	大十七十十十十十十十十十十十十十十十十十十十十十十十十十十十十十十十十十十十
ionsile Strength (Moulding Direction)	拉伸强度	0.8~34	ND-	対や場面
Elongation at Break (Moulding Direction)	中不明	100-400	to The	ASIM DE38
Density	Therete	Ont- ont	ge .	ASTM D638
Hardess	10.11	2, 13~2, 25	1	ASTM D792
an ne	収度	50~55	杜罗硬度计	ASTM D2240
W. J. J.	等山弧度	1	MPa	ASTW D790
10	等曲模型	350~250	MPa	ASTW D790
9	压船弧度	7.7~11.8	MPa	ASTM DROS
CLECIMICAL PROPERTIES	原田	製造権	47.70	TOWN TOWN
Dielectric Strength @Air (Tape)			五十	可能力法
* #0il (Extrusion/Moulding)	約據頭度	19.2	KV/um	ASTM C149
Dielectric Constant	45.11.44.115			
Dissipation Factor 85017	A CASA	1. HO ~ Z.	1	ASTM D150
	介质指挥	<0.0002	(E011Z)	
		<0.0002	(ZI ₉ 01)	ASTM D150
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evolume .	体积电阻	>1018	mo Q	ASTM D257
THERMAL PROPERTIES	項目	製造体	***	Charles and
Point of Fusion DSC	中華	M - 500	77.4	可能力研
Max. Working Temperature	AT WELL	32/±10	q	ASTM D792
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WEAR DEADLISTER WOULding Direction (MD)	导热系数	1.9	10-6W/(m. K)	ASTM C177
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Confilcient of Dynamic Friction	お原根を動		1	MADE // 177

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板桶:

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測試報告 **Test Report**

號碼(No.): CE/2008/B0420

日期(Date): 2008/11/11

頁數(Page): 1 of 6

名佳利金屬工業股份有限公司 MINCHALI METAL INDUSTRY CO., LTD.

中級市北園路11號

11, PEI YUAN ROAD, CHUNG LI CITY, TAIWAN

以下測試樣品係由客户送樣,且由客户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)

樣品型號(Style/Item No.)

收件日期(Sample Receiving Date)

副試期間(Testing Period)

黄纲

C2680(65/35) 79A526A

2008/11/4

2008/11/4 TO 2008/11/11

測試需求(Test Requested)

參照 RoHS 2002/95/BC 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)

- (1) 多考IEC 62321/2nd CDV (111/95/CDV) Clause 9方法。 用感應藕合電景 原子發射光譜儀检測鍋含量, / With reference to IEC 62321/2nd CDV (111/95/CDV) - Clause 9. Determination of Cadmium by ICP-ARS.
 - (2) 冬者IEC 62321/2nd CDV (111/95/CDV) Clause 9方法, 用感應藕合電景 原子發射光譜儀检測鉛含量. / With reference to IEC 62321/2nd CDV (111/95/CDV) - Clause 9. Determination of Lead by ICP-AES.
 - (3) 冬考IEC 62321/2nd CDV (111/95/CDV) Clause 7方法。用感應耦合電景 原子發射先譜儀檢測录含量. / With reference to IEC 62321/2nd CDV (111/95/CDV) - Clause 7. Determination of Mercury by ICP-ARS.
 - (4) 針對金屬材質之樣品, 參考IEC 62321/2nd CDV (111/95/CDV) Annex B方 法检测。 用Spot test / boiling water extraction方法检测六债路含量。 / With reference to IBC 62321/2nd CDV (111/95/CDV) - Annex B. Determination of Hexavalent Chronium for metallic samples by Spot test / boiling water extraction Method.
 - (5) 冬考IEC 62321/2nd CDV (111/95/CDV) Annex A方法, 以氣相層析儀/質 譜儀檢測多溴聯苯和多溴聯苯醚含量。/ With reference to IEC 62321/2nd CDV (111/95/CDV) - Annex A. 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)

Chenyu Kung / Operation Manager

Signed for and on behalf of SGS TAIWAN LTD.

Chemical Laboratory - Taipei

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 on the performed tests on submitted samples, the test results are compliant with the limits of RoHS Directive 2002/95/EC and its 金術金属制品(深圳)有限公司

subsequent amendments).

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測試報告 **Test Report**

號碼(No.): CE/2008/B0420

日期(Date): 2008/11/11

頁数(Page): 2 of 6

名佳利金屬工業股份有限公司 MINCHALI METAL INDUSTRY CO., LTD. 中壢市北園路11號

II, PEI YUAN ROAD, CHUNG LI CITY, TAIWAN

測試結果(Test Results) 單位(Unit): ng/kg

测试项目 (Test Items)	測試方法 Method (Refer to)	结果 (Result)	方法侦测	RoHS
		No.1	極限値 (MDL)	程值 (Limit)
婦 / Cadmium (Cd)	(1)	n.d.	2	100
鉛 / Lead (Pb)	(2)	7	2	1000
表 / Nercury (Hg)	(3)	n.d.	2	1000
六僚路 / Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(4)	Negative	See Note 4	*
多溴聯苯總和 / Sun of PBBs		n.d.		1000
一溴聯苯 / Manobranobiphenyl	(5)	n.d.	5	-
二溴聯苯 / Dibromobiphenyl		n.d.	5	-
三溴聯苯 / Tribromohiphenyl		n.d.	5	14
四溴學苯 / Tetrabronobiphenyl		n.d.	5	-
五溴曙苯 / Pentabronobiphenyl		n.d.	5	-
六溴聯苯 / Hexabronobiphenyl		n.d.	5	3 .
七溴聯苯 / Heptabromokiphenyl		n.d.	5	1 14.
八溴聯苯 / Octabromobiphenyl		n.d.	5	-
九溴哪苯 / Nenabromobiphenyl		n.d.	5	
十溴哪苯 / Decabronobiphenyl		n.d.	5	
多溴學苯醚總和 / 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	
三溴哪苯醚 / Tribronodiphenyl ether		n.d.	5	-
四溴聯苯醚 / Tetrabromodiphenyl ether		n.d.	5	-
五溴聯苯醚 / Pentabromodiphenyl ether		n,d.	5	-
六溴群苯醚 / Hexabromodiphenyl ether		n.d.	5	
七溴聯苯醚 / Heptabronodiphenyl ether		n.d.	5	4
八溴聯苯醚 / Octabronodiphenyl ether		n.d.	5	
九溴聯苯醚 / Nonabronodiphenyl ether		nid,	- 1745/A TI	
· 溴聯苯醚 / Decabromodiphenyl ether		n.d. pre H	有物。	

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名佳利金屬工業股份有限公司 MINCHALI METAL INDUSTRY CO., LTD. 中壢市北围路11號 11, PEI YUAN ROAD, CHUNG LI CITY, TAIWAN

测试部位描述 (TEST PART DESCRIPTION):

: 黄銅色金屬片 (YELLOW-COPPER COLORED METAL SHEET)

備註(Note):

- 1. mg/kg = ppm
- 2. n.d. = Not Detected (未检出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. Spot-test:

Negative = Absence_of Cr(VI) coating / surface layer(鎖層中偵測不到六價格).

Positive = Presence of Cr(VI) coating / surface layer(鏡層中偵測到六價路);

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

(當該測項無法確認時,測試樣品可藉由boiling-water-extraction測試方法進一步確認)

Boiling-water-extraction:

Negative = Absence of Cr(VI) coating / surface layer(鐵層中偵測不到六價鉻).

Positive = Presence of Cr(VI) coating / surface layer(鍵層中債測到六價路);

the detected concentration in boiling-water-extraction solution is equal or

greater than 0.02 ng/kg with 50 cm sample surface area.

該溶液濃度≥0.02 ng/kg with 50 cm2 (sample surface area)

- 5. # = Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as not comply with Roll'S requirement. (Positive表示測試區域之六價絡不符合RoHS要求) Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as comply with RollS requirement. (Negative表示測試區域之六價鉻符合RoHS要求)
- 6. "-" = Not Regulated (無規格值)

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頁數(Page): 4 of 6

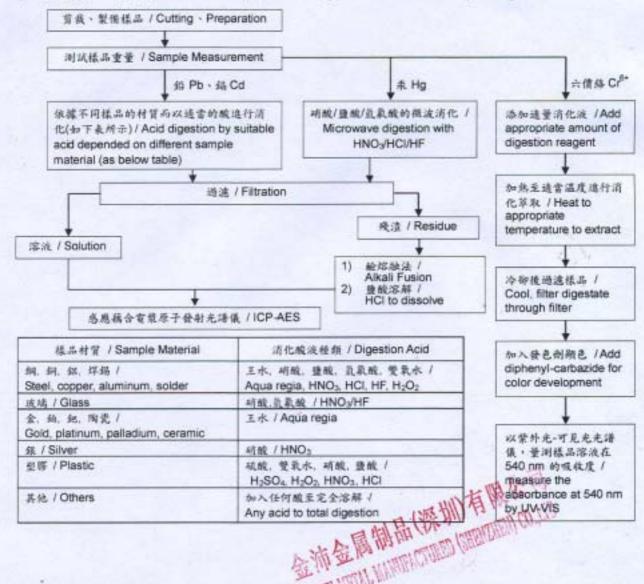
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Test Report

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11, PEI YUAN ROAD, CHUNG LI CITY, TAIWAN

- 根據以下的流程圖之條件,樣品己完全溶解。(六價路測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁸⁺ test method excluded)
- 2) 测试人员: 楊登偉 / Name of the person who made measurement. Climbgreat Yang
- 対抗負責人:張啓與 / Name of the person in charge of measurement: Troy Chang.



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測試報告 **Test Report**

號稿(No.): CE/2008/B0420 日期(Date): 2008/11/11

頁数(Page): 5 of 6

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名佳利金屬工業股份有限公司 MINCHALI METAL INDUSTRY CO., LTD. 中避市北固路11號 11, PEI YUAN ROAD, CHUNG LI CITY, TAIWAN

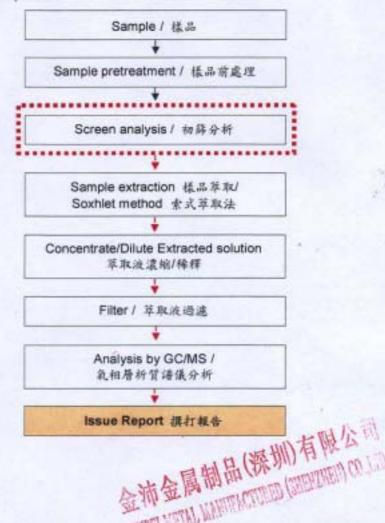
多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

-) 測試人員: 翁馬彬 / Name of the person who made measurement: Roman Wong
- 2) 测试负责人:除新智 / Name of the person in charge of measurement: Shinjyh Chen

初次测试程序 / First testing process ——

選擇性篩檢程序 / Optional screen process

確認程序 / Confirmation process - - - ▶



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报告结尾 **

金術金屬制品(深圳)有限公司 LEANIER COUNTY CHENTER ON L'A

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No. SH8100746/CHEM

Date: Jul. 15, 2008

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深圳市华尔莱塑五金精密制品有限公司 深则市光明新区公明街道上村托区下辇工业区第8幅

委托检验的样品及客户对样品的说明如下

样品名称

:型钢(聚甲醛)绝缘子

SGS 相关号

111152033-2

主要成份

: 聚甲醛

样品收到日期

2008-07-11

样品试验日期

: 2008-07-11-2008-07-15

试验要求

:参照 RoHS 指令 2002/95/EC 及后键修正指令。

试验方法

: 参照 IEC 62321/2nd CDV (111/95/CDV): 电子电器产品中限用物质含量的测定程序

(1) 用 ICP 测定镉的含量

(2) 用 ICP 测定铅的含量

(3) 用 ICP 测定汞的含量

(4) 用比色法测定六价铬的含量

(5) 用 GC/MS 測定 PBBs(多溴联苯)和 PBDEs(多溴联苯醚) 的含量

试验结果

. 児后建页

试验结论

: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。

SGS-CSTC 化学实验室授权签字

张靖 部门经理 SGS-CSTC 化学实验室授权签字

实验室经理

本报告是发布日期为 2008 年 07 月 15 日编号为 SH8100745/CHEM 英文检测报告的中文译本。如有异议,以英文版本为



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化学方法的试验结果 (单位: mg/kg)

测试项目:	方法 (参见)	1	MDL	RoHS
隔(Cd) 铝(Pb)	(1)	ND	2	100
来(Hg)	(2)	ND	2	1000
	(3)	ND	2	1000
碱性溶液萃取潮六价格(Cr VI) 多溴联苯(PBBs)之和	(4)	ND	2	1000
· 溴联苯		ND	-	1000
漢联苯		ND	5	-
三溴联苯		ND	5	-
四溴联苯		ND	5	-
五濃联業		ND	5	
六溴联苯		ND	5	
七溴联苯		ND	5	
八濱联苯		ND	5	
		ND	5	1
九溴联苯		ND	5	
十溴联苯	(5)	ND	5	
多溴联苯醛(PBDEs)之和	(5)	ND	-	1000
一溴联苯醚 		ND	5	1000
- 澳联苯醚		ND	5	
三溴联苯醚		ND	5	-
四溴联苯醚		ND	5	
五溴联苯醚		ND	5	-
六溴联苯醚		ND	5	
七溴联苯醚		ND	5	
八溴联苯醚		ND	5	
九溴联苯醚		ND	5	-
十溴联苯醚 《试部件外观描述:		ND	5	

1. 白色固体

SGS

备注:

- (1) 毫克每千克=百万分之一(mg/kg=ppm)
- (2) ND =未检出
- (3) MDL =检测极限值
- (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联苯醚的豁免 被否决。自2008年7月1日起,十溴联苯醚将被包含于多溴联苯醚的总和计算之中。
- (5) "二" = 未规定
- (6) 最大允许极限值引用自 2002/95/EC RoHS 指令和后继修正指令 2005/618/EC。

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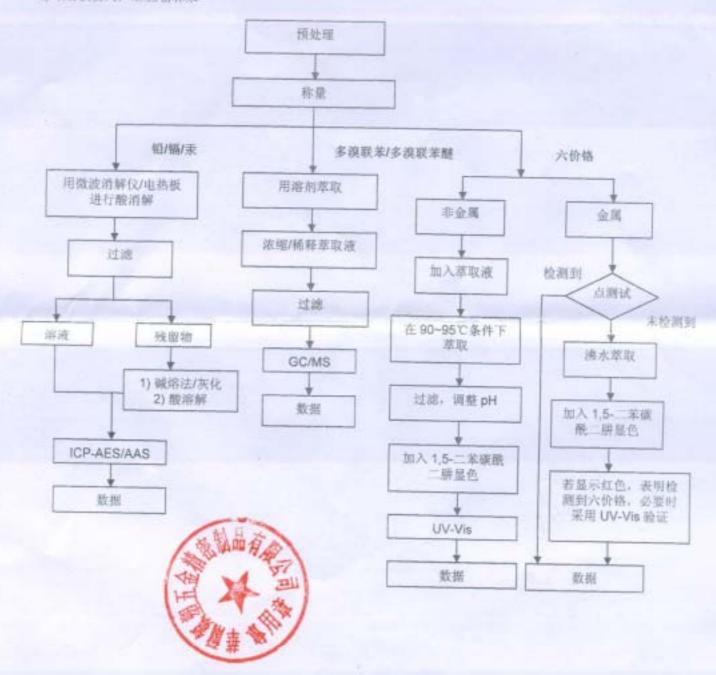
Date: Jul. 15, 2008

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附件

1) 分析人员: 蔡晓丹/徐亮/王慧

2) 项目负责人: 王卫/岳林禾



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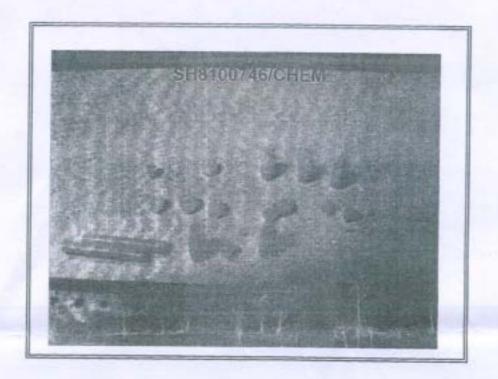
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