編號：

（台灣）榮昌科技

（大陸）

品名：DIPOLE ANT / 白（榮昌）

規格：2.4G 4dBi ANT L=178mm（1 袋 3 支）

料號：OA-24-04-01-WI-EDS11

客戶：訊舟科技股份有限公司

客戶料號：3009-00000134-01Z

日期：2015/1/19

地址： 23145 新北市新店區寶橋路 235 巷 4 號 3 樓

電話： 02-2917-7353

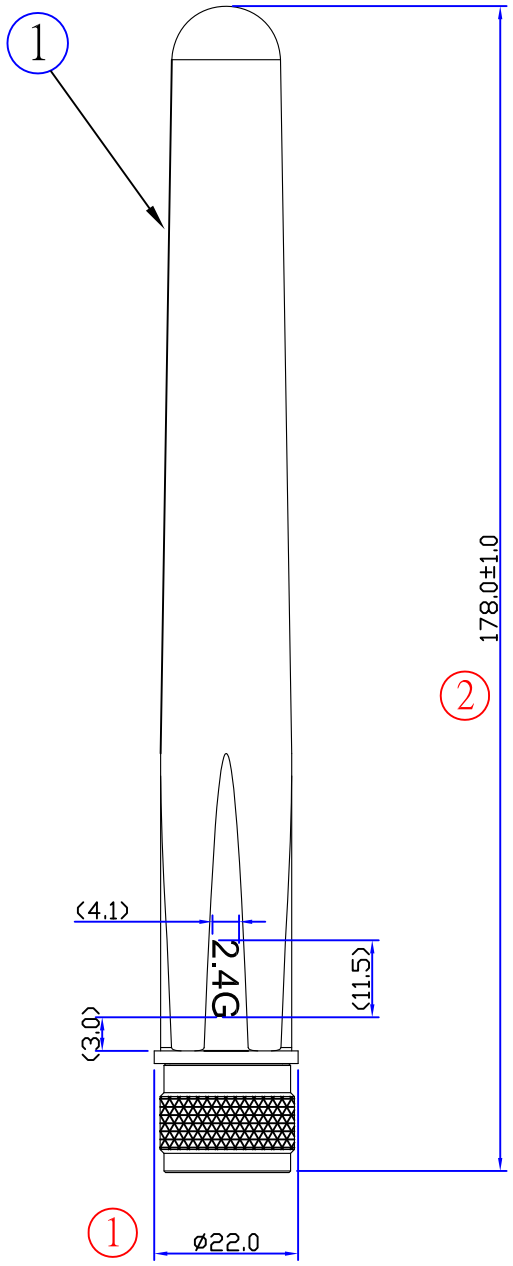
傳真： 02-2910-6546

地址：

電話：

傳真：

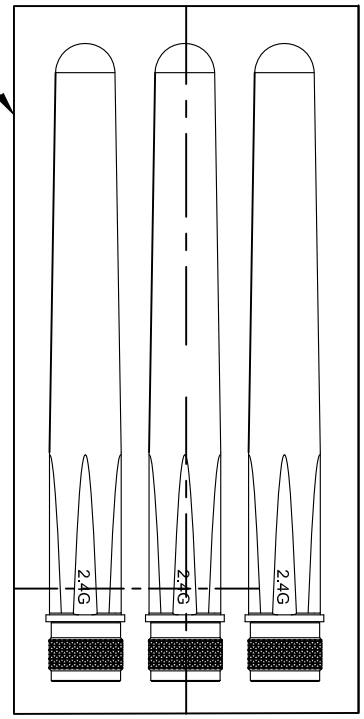
確認				客戶確認
製作	審核	核准	業務	
Tom	Jesse	Minghu	Kevin	



Electrical Specification	
Frequency range	2400MHz - 2500MHz
Peak Gain	4.0dBi
VSWR	2.0 Max. : 1
Polarization	Linear,Vertical
HPBW-Horizontal	360 °
HPBW-Vertical	35 °
Power handing	2 W (cw)
Impedance	50 Ohms
Connector	N plug

Environmental & Mechanical Characteristics	
Operating temperature	-40°Cto 70°C
Storage temperature	-40°Cto 85°C
Humidity	95% @ 55°C
Radome color	White
Radome material	ASA
Weight	58 g
Dimensions	ø 22 x 178mm

包裝示意圖



每袋裝 3 pcs

Printing : 2.4G
Font : Arial
Color : Cool gray 8C

RoHS

ITEM	Q'TY	U/M	PART NO.	DESCRIPTION
2	1	EA	PE BAG 18x24CM	PE袋 18x24CM
1	3	EA	OS-ISM24-05-C0	IP67 2.4GHz N Type antenna

UNLESS OTHERWISE SPECIFIED TOLERANCE : ANGLES : ±2° X.X ±0.3 X.XX ±0.15 DO NOT SCALE DRAWING

榮昌科技股份有限公司
GRAND-TEK TECHNOLOGY CO., LTD.

DRAWN BY	Tom	TITLE	OMNI-DIRECTIONA ANTENNA FOR 2.4~2.5GHz		G0086
CHECKED BY	Jesse	SIZE A	UNIT mm	PART NO. 3009-00000134-01Z	REV. C
APPROVED BY	Minghu	SCALE	1 : 1	THIRD ANGLE PROJECTION	PAGE 1 OF 2
DWG NO.				ITEM NO. OA-24-04-01-WI-EDS11	DATE 2014/10/28

First Article Inspection Report

客戶	Edimax	料號	3009-00000134-01Z	品名	DIPOLE ANT / 白 (榮昌)	機種	7679OAC
圖面版次	B	模數/穴數	1-1	單位	mm/deg.	量測日期	2014/10/28

Item	Measure Instrument	Drawing dim.			Actual dim1.	Actual dim2.	Actual dim3.	Delta dim1.	Delta dim2.	Delta dim3.	Result		Remark
		Nominal	Tolerance								OK	NG	
			-	+									
1	數位卡尺	22.00	-0.30	0.30	22.12	22.14	22.11	0.12	0.14	0.11	*		
2	數位卡尺	178.00	-1.00	1.00	178.750	178.830	178.810	0.750	0.830	0.810	*		
3	網路分析儀	2.00	-2.00	0.00	1.570	1.620	1.540	-0.430	-0.380	-0.460	*		spec : Max. 2.0 : 1
4											*		
5											*		
6											*		
7											*		
8											*		
9											*		
10											*		
11											*		
12											*		
13											*		
14											*		
15											*		
16											*		
17											*		
18											*		
19											*		
20											*		
21											*		
22											*		
23											*		
24											*		
25											*		

COMMENTS					
Measured by:	Tom	Checked By:	Jesse	Approved by	Minghu

Outdoor IP-67 2.4GHz Omni Antenna For 802.11 b/g/n/ac

2400~2500MHz

GTT P/N:OA-24-04-01-WI

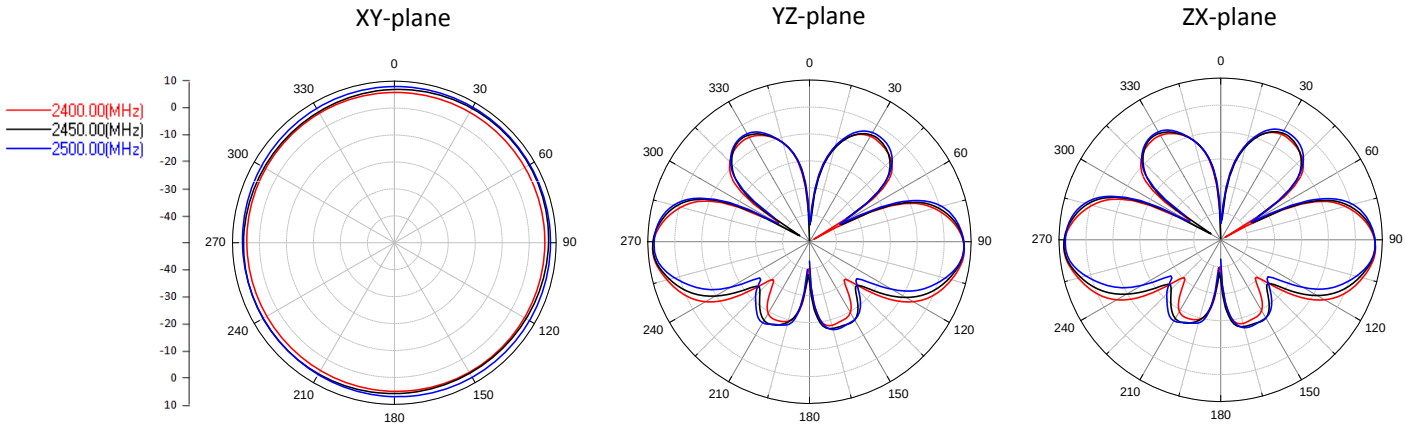
✓ RF Specification

- Frequency Range: 2400~2500 MHz
- Polarization: Linear, Vertical
- HPBW / Horizontal: 360◦
- HPBW / Vertical: 35 ◦
- Peak Gain: 4.0 dBi typ.
- Efficiency: 70% Min.
- VSWR: 2.0 Max.:1
- Power Handing: 2W(cw)
- Impedance: 50 Ohms
- Connector: N Plug

✓ Environmental & Mechanical Characteristics

- Temperature: -40℃ to +70℃
- Humidity: 95% @55℃
- Antenna Housing Color: White
- Antenna Housing Material: ASA
- Weight : 58 g
- Dimensions: 178.0(L) x 22.0(W) mm

✓ Radiation Pattern



[redacted]

各種充てん材入りPTFEの特性

	単位	充てん材（重量%）		PTFE	CF10	CF15	GF25	青銅15%
比重	g/cm³	測定条件 23℃		2.17	2.09	2.04	2.28	3.21
熱伝導率	kcal/m·hr·℃			0.30	0.40	0.40	0.34	2.16
熱膨張係数	×10⁻⁵/℃	25～100℃	MD	11	17	14	9	11
			CD	10	7	5	6	2
		25～150℃	MD	12	19	16	10	1
			CD	11	7	5	7	9
		25～200℃	MD	14	21	18	11	11
			CD	12	8	6	7	9
		25～250℃	MD	17	24	22	13	14
			CD	15	10	7	9	11
引張強さ	kgf/cm²	JISK6891		330	245	210	220	280
伸び	%	JISK6891		350	300	280	310	215
圧縮強さ	kgf/cm²	0.2%変形 24℃	MD	—	—	—	—	—
			CD	73	—	116	80	90
		1%変形 24℃	MD	—	—	—	—	—
			CD	44	—	80	80	80
		25%変形 24℃	MD	—	—	—	—	—
			CD	280	—	445	390	450
圧縮弾性率	kgf/cm²		MD	—	—	—	—	—
			CD	1.7×10³	8.0×10³	9.[illegible]×10³	10.[illegible]×10³	[illegible]
曲げ強さ（弾性率）	kgf/cm²	ASTMD-790	CD	1.5～6.3×10³	12.4×10³	—	16.[illegible]×10³	
圧縮クリープ	%	ASTMD-621 140kgf/cm²25℃ 24hrs 2	MD	9.5	4.2	4.3	4.9	
イ．変形量			CD	—	—	—	—	
ロ．永久変形	%	70kgf/cm² 25℃·24hrs	MD	4.8	—	3.6	3.5	
			CD	—	—	—	—	
		140kgf/cm² 25℃·24hrs	MD	7.0	2.3	1.4	6.2	
			CD	—	—	—	—	
		70kgf/cm² 25℃·24hrs	MD	4.6	—	0.8	3.1	
			CD	—	—	—	—	
硬度	シュアーD			58	59	61	64	
摩擦係数（動）				0.22	0.27	0.19	0.15	
摩擦係数（静）				0.045	—	—	0.05	
摩耗係数	mm/km / kgf/cm²	65hrs耐水試験機による		3.3×10⁻³	0.1×10⁻⁵	1.0×10⁻⁵	1.0×10⁻⁵	0.[illegible]×10⁻⁵
絶縁耐力	kv/mm	JISD2123(油中)		16.4	—	—	13.[illegible]	
誘電率		JISD6911	10³Hz	2.06	—	—	3.9	
			10⁶Hz	2.05	—	—	2.8	
吸水率	%	3.2mm厚24H ASTM D570		0.01>	—	—	0.013	

※MDは成形加工に平行方向、CDは成形加工に垂直方向

※この表はフッ素樹脂メーカーのデーターを基にした数値を記載しました。

数値は、あくまで試験において行われた実験データで、環境の違いにより若干異なることがあります。（保証値ではありません）

THE MATERIAL CERTIFICATE OF BRASS

Customer	SOCAA CORP.,LTD. (Solution Of Connector & Antenna)		
Material	Free cutting brass		
Stability-class: JIS H 3250 C3604 BD			
CHEMICAL COMPOSITION %			
Taster	X-RAY ANALYSIS		
Measurement	VACUUM X RAY SPECTROGRAPH		
ELEMENT	STANDARD VALUE	ACTUAL VALUE	REMARK
Cu	57.0-61.0%	58.43 %	
Pb	1.8-3.7 %	3.36 %	
Fe	<0.5 %	--------	
Sn+Fe	<1.2 %	0.71 %	
Zn	REMAINDER	REMAINDER	
Other			
MECHANICAL & PHYSICAL PROPERTIES			
Tensile strength : 360 N/mm^2			
Heated*material Hardness or stability, HB or HV : (90)			
REMARK: ASTM Standard: CA 360 Free cutting brass.			

BRUSHWELLMAN
ENGINEERED MATERIALS

Shoemakersville Road, Shoemakersville, PA US 19555
Phone: 610-562-2211 ; Fax: 610-562-6610

EW0495-R

Brush Wellman (Singapore) Pte Ltd
110 Paya Lebar Road, #02-01
SINGAPORE-SG 409009
SINGAPORE
SG

Material Certificate

Date
09/14/2008
Purchase order item/date
4500204978 / 04/05/2008
Delivery item/date shipped
80390707 000010 / 09/11/2008
Order item/date
224338 000010 / 04/05/2008
Customer nbr Customer part nbr
11817
Customer spec

Rev	Type	Comp	Class	Grade

Our Material: K557160400 ROD CD M25 H .09843 X φ2.5

"Brush Wellman Inc. declares that this product is in conformance with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)."

Brush Wellman testing for chemical composition (by Optical Emission Spectrometry), is conducted at our Elmore, OH Laboratories. Testing of mechanical, or physical properties is conducted at Laboratories which are accredited by American Association for Laboratory Accreditation.

This material was inspected and tested for conformity as required in accordance with the noted part, specification, and revision number. The quantitative test data obtained from these tests are available for review by the buyer.

Batch 0000667435 / Quantity 549.300 KG

Characteristic	Unit	Value	Specification Limits Lower	Upper
CDA (UNS) Alloy	-	C17300		
ASTM Temper	-	TD04		
Brush Spec Nbr.	-	BWJ-RW5.00-2		
Dimensional Attributes				
Diameter	-	2.5000		
Diameter Plus	-	0.000		
Diameter Minus	-	0.010		
Length	-	2,500.000		
Mechanical/Physical Properties				
Grain Size	mm	0.018 0.022		0.050
Tensile	N/mm2	701 710	621	862
Yield @ 0.2% Offset	N/mm2	575 619	510	724
Elongation (4D or 2")	%	12.0 14.0	10.0	
Hardness Scale	-	HV		
Hardness Value		213.0 219.0	200.0	270.0

The material supplied with this certification has not been heat treated. The following properties were achieved in Brush Wellman's laboratory. They represent what you may expect after heat treating the material, using the time and temperatures shown.

BRUSHWELLMAN
ENGINEERED MATERIALS

EW0095-R

Brush Wellman (Singapore) Pte Ltd
110 Paya Lebar Road, #02-01
SINGAPORE-SG 409009
SINGAPORE

Delivery item/date
80390707 000010 /
09/11/2008

R1 Temper	-	HT		
R1 Heat Treat Time	hrs	2.00	2.00	2.00
R1 Heat Treat Temp	°C	316	316	316
R1 Tensile	N/mm2	1353 1372	1276	1551
R1 Yield	N/mm2	1253 1300	1096	1386
R1 Elongation	%	3.0 4.0	2.0	9.0
R1 Hardness Scale	-	HV		
R1 Hardness Value		412.0 420.0	383.0	445.0

Chemistry Composition

Beryllium	%	1.83	1.80	2.00
Ni+Co	%	0.22 ... 0.23		0.35
Ni+Co+Fe	%	0.25 ... 0.26		0.60
Silicon	%	0.05		0.15
Aluminum	%	0.02		0.10
Lead	%	0.40	0.20	0.40
Alloy Balance	-	COPPER		

Lot Identification

Heat Number	-	18850
Production Order No.	-	100327074

Quality Representative

鈦貿科技股份有限公司

出貨檢驗報告 Inspection Report

客戶名稱	研原			檢驗日期	97 年 10 月 31 日
貨品名稱	C17300 M25	尺寸規格	2.5 X 500	出貨數	8.5 KG

尺寸檢驗紀錄

檢驗項目	測定數據序號				
	1	2	3	4	5
厚度	2.49	2.48	2.49		
寬度					
長度	500	500	500		
外觀	OK	OK	OK		
判定結果	OK	OK	OK		

隨貨附件	☐ 材質證明 ☐ 試片 ☐ 發票 ☐ 其他	審核		檢測員
				王淑貞

物質安全資料表

KE-971TU 2006年5月

一、物品與廠商資料

物質名稱：矽橡膠混合物
物品編號：KE-971TU
製造商名稱：台灣信越矽利光(股)公司
地址：台北市松山區敦化北路167號11樓D室
電話：886-2-27150055
緊急聯絡電/傳真電話：886-2-27150055 FAX：886-2-27150066
緊急聯絡處：台灣信越矽利光(股) [新竹縣303新竹擴大工業區光復南路25號]
緊急聯絡電話：886-3-598-3111；傳真電話：886-3-598-2204
緊急聯絡人：葉志彥

二、成分辨識資料

純物質或混合物：混合物
中英文名稱：Organopolysiloxane mixture有機聚矽氧烷混合物

成份(CAS 名稱)	CAS NO.	Content(%)
1.Siloxanes and silicones , di-Me,Me-Vinyl , vinyl group-terminated	68083-18-1	45~65
2.Silane , dimethoxydimethyl	1112-39-6	2~12
3.Silica gel , PPTD. ,cryst.-free	112926-00-8	25~45
4.Siloxanes and silicones , di-Me,hydroxy-terminated	70131-67-8	2~12

三、危險辨識

物品危害分類：無 (依據IMO)
火災及爆炸：
無自燃及爆炸之危險
潛在健康效應：
皮膚接觸：無重大的影響。
眼睛接觸：可能造成眼睛輕微的過敏。
吞　食：無相關資料。

四、急救措施

不同暴露途徑之的急救方法
皮膚接觸：請立刻以乾淨之乾布或毛巾擦拭，並以清潔劑清洗接觸之部位。
眼睛接觸：請立刻以乾淨的水持續沖洗至少十五分鐘，並立即送醫治療。

物質安全資料表

KE-971TU 2006年5月

吞　食：若是人員清醒，立即以乾淨大量的水沖洗嘴巴；若是人員失去知覺勿讓任何物質進入嘴巴，立即送醫治療。

最重要的症狀與危害影響：－

對急救人員的防護：－

對醫師之提示：－

五、滅火措施：

適用滅火劑：泡沫、乾粉或二氧化碳型滅火器、或以水噴灑。

滅火時可能遭遇之特殊危害：無

特殊滅火程序：無

消防人員之特殊保護設備：－

六、洩漏處理方法

個人應注意事項：－

環境注意事項：－

清理方式：請先將洩漏處封好，將洩漏出來的部份收集起來，裝到容器內。

七、安全處置與儲存方法

請儲存於陰涼處。不要使用時請密閉容器。遠離熱和火源。放在小孩拿不到的地方。

八、暴露預防措施/個人防護

暴露限制：

ACGIH TLV-TWA : 未經確認。 OSHA PEL :未經確認。

通風排氣：現場排氣-參考第十一節之其他資訊。 機械(一般)-參考第十一節之其他資訊。特殊-未知。其他-未知。

個人防護設備：

呼吸防護(特定的形式)：不需要

防護手套：塑膠手套

眼睛防護：不需要

其他防護裝備：不需要。

實際操作及衛生措施：操作使用後，請用清潔劑洗手。

物質安全資料表

KE-971TU 2006年5月

九、物理及化學特性

物理狀態：液體	形狀：固狀
顏色：乳白色, 半透明	氣味：無味
pH值：—	沸點：—
分解溫度：—	閃火點(測量方式)：不適用
揮發速率：不適用 (乙酸丁酯=1)	燃燒界限：不適用
蒸氣壓：不適用	蒸氣密度：— (空氣=1)
比　重：1.21 (25℃)	溶解度：不溶於水

十、安定性及反應性

安 定 性：安定

　應避免之狀況：無

不相容性(應避免的物質)：無

危害分解物及副產物：無

有害性聚合:不會發生

　應避免之狀況：無

十一、毒性資料

皮膚刺激性 : 不適用

眼睛刺激性 : 不適用

急毒性(LD50)：無相關資料

急毒性(LC50)：不適用

慢性毒性：無相關資料

致癌性：　NTP-無列入 , IARC-無列入 , OSHA 規範-無列入

其他：這個產品在空氣中約150℃(300°F)或以上會產生甲醛，皮膚及呼吸系統對於甲醛是敏感的，對於眼睛和喉嚨是刺激的、急毒性和潛在致癌性危害的。所以當這個產品在空氣中大約150℃(300°F)或以上時，要使用足夠的通風設備或穿戴防護措施，像是手套、護目鏡或防護衣物等。

十二、生態資料

生物分解性 : 不適用

生物蓄積性 :不適用

水毒性 : 不適用

其他：無

物質安全資料表

KE-971TU 2006年5月

十三、廢棄處置方法

可用掩埋或使用具有後燃器及過濾裝置化學焚化爐焚燒
其他相關處理方式，請依當地相關環保法規處理

十四、運送資料

聯合國編碼(UN NO)：無
IMO分類及等級：無
包裝分類：無
一般運輸名稱：無
專業運輸名稱：無
海洋污染源：無
DOT 可報告數量 :
有害物質名稱 / (CAS NO.) , 內容物及可報告數量 : 不適用

十五、法規資料

ACT(TSCA)毒性物質控制狀態 : 列於TSCA物品清單上
****
1986 SARA條例 , Title Ⅲ 第313節 , 供應商提醒事項 :
化學名稱 / (CAS NO.) , 內容物 : 無
****
加州第65號提案:
化學名稱 / (CAS NO.) , 內容物 : ** 無**

十六、其他資料

僅做工業用
請勿吸入硬化時之廢氣
****
本物質安全資料表僅供使用者參考用。其中所列之數據包含文獻上數據,敝公司所獲得數據及相類似之化學物質或產品之數據。台灣信越矽利光(股)公司,對本物質安全資料表內之數據,不提供明顯或暗示性保證,對數據之正確性及完整性也不承擔責任。

Material Safety Data Sheet

KE-971TU

SECTION 1. COMPANY IDENTIFICATION

PRODUCT CLASSIFICATION : Silicone Rubber Compound

PRODUCT NAME : KE-971TU

MANUFACTURER'S NAME: Shin-Etsu Silicone Taiwan Co., Ltd.

ADDRESS:25,Kuang Fu S. Rd. Hsin-Chu Ind. Park, Hsin-Chu, Taiwan 303, R.O.C.

TELEPHONE NUMBER:03-598-3111 ext 43

EMERGENCY PHONE NO: (02)27150055 FAX : (02)27150066

SECTION 2. COMPOSITION

SINGLE OR MIXTURE: Mixture

CHEMICAL IDENTIFICATION : Organopolysiloxane mixture

COMPOSITION	CAS NO.	Content(%)
1.Siloxanes and silicones , di-Me,Me-Vinyl , vinyl group-terminated	68083-18-1	45~65
2.Silane , dimethoxydimethyl	1112-39-6	2~12
3.Silica gel , PPTD. ,cryst.-free	112926-00-8	25~45
4.Siloxanes and silicones , di-Me,hydroxy-terminated	70131-67-8	2~12

HAZARDOUS COMPONENT(S) / (CAS NO.) :

No hazardous materials present

SECTION 3. HAZARDS IDENTIFICATION

HAZARDS CLASSIFICATION : None (IMO)

FIRE AND EXPLOSION : No flammable and explosive hazard

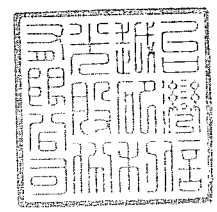
POTENTIAL HEALTH EFFECT :

Skin contact ; No significant effect.

Ingestion ; No information is available.

SECTION 4.FIRST AID MEASURES

Ingestion ; Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Call a physician immediately.



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SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT(method used) : Not applicable

FLAMMABLE LIMITS : Not applicable

EXTINGUISHING MEDIA: Foam, dry chemical, carbon dioxide or fine water spray

UNUSUAL FIRE AND EXPLOSION HAZARD : None

SPECIAL FIRE FIGHTING PROCEDURE : Not required

SECTION 6. ACCIDENTAL RELEASE MEASURES

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Collect spilled materials and place in a container.

SECTION 7. HANDLING AND STORAGE

PRECUATION TO BE TAKEN INHANDLING AND STORAGE

Keep container closed when not in use. Store in a cool place.

Keep away from heat、sparks and flame.

Keep out of reach of children.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES :

ACGIH TLV-TWA : Not established,

OSHA PEL : Not established

RESPIRATORY PROTECTION(Specified type) :

See SECTION 11 of this MSDS for OTHER INFORMATION

VENTILATION :

LOCAL EXHAUST: See SECTION 11 of this MSDS for OTHER INFORMATION

Mechanical (General) : See SECTION 11 of this MSDS for OTHER INFORMATION

Special : Unknown

Other : Unknown

PROTECTIVE GLOVES : Plastic film s

EYE PROTECTION : Not required

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OTHER PROTECTIVE CLOTHING OR EQUIPMENT : Not required

WORK/HYGIENIC PRACTICES :

Wash hands after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT : Not applicable

VAPOR PRESSURE : Not applicable

VAPOR DENSITY (air=1): Not applicable

SPECIFIC GRAVITY : 1.21(25℃ water=1)

EVAPORATION RATE : Not applicable(Butyl Acetate = 1)

SOLUBILITY IN WATER : Not soluble

APPEARANCE (Color) : Milk-white, translucent

APPEARANCE(form) : Solid

ODOR : Odorless

SECTION 10. STABILITY AND REACTIVITY

STABILITY : Stable CONDITION TO AVOID : None

HAZARDOUS POLYMERIZATION : Will not occ CONDITION TO AVOID : None

INCOMPATIBILITY(material to avoid) : None

HAZAROUS DECOMPOSITION OR BY-PRODUCT : None

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY(LD50) : No information is available.

ACUTE TOXICITY(LC50) : Not applicable

SKIN IRRITATION: Not applicable

EYE IRRITATION: Not applicable

CHRONIC TOXICITY : No information is available.

CARCINOGENICITY : NTP:Not listed, IARC:Not listed, OSHA REGULATED:Not listed

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OTHER INFORMATION :

This product can generate formaldehyde at approximately 150 degrees C(300'F) and above in the presence of air. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant and potential cancer hazard. So, use adequate ventilation or wear protective equipment such as gloves, goggles or protective clothing when this product is heated at approximately 150 degrees C(300'F) and above in the presence of air.

SECTION 12. ECOLOGICAL INFORMATION

BIODEGRADATION: Not applicable

BIOACCUMULATION: Not applicable

AQUATIC TOXICITY: Not applicable

OTHER INFORMATION:None

SECTION 13. DISPOSAL CONSIDERATIONS

Can be burned in chemical incinerator equipped with afterburner and scrubber .

Observe all federal , state and local laws .

SECTION 14. TRANSPORT INFORMATION

UN No. : None

IMO CLASSIFICATION AND CLASS : None

PACKAGING GROUP : None

PROPER SHIPPING NAME : None

TECHNICAL SHIPPING NAME : None

MARINE POLLUTANT : None

DOT REPORTABLE QUANTITY (RQ) :

HAZARD SUBSTANCE(S) NAME / (CAS NO.) , CONTENTS AND RQ

Not applicable

SECTION 15. REGULATORY INFORMATION

TOXIC SUBSTANCE CONTROL ACT(TSCA) STATUS :

Listed on the TSCA Inventory .

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SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986(SARA) TITLE III SECTION 313 SUPPLIER NOTIFICATION :

This regulation requires submission of annual reports of toxic chemical(s) that appear in section 313 of the emergency planning and community Right-To-Know Act of 1986 and 40CFR 372 . This information must be included in all MSDS's that are copied and distributed for the material .

The toxic chemical(s) contained in this product are :

CHEMICAL NAME / (CAS NO.) AND CONTENTS

None

****

CALIFORNIA PROPOSITION 65 :

This regulation requires a warning for California Proposition 65 chemical(s) under the statute .
The California Proposition 65 chemical(s) contained in this product are :

CHEMICAL NAME / (CAS NO.) AND CONTENTS

None

SECTION 16. OTHER INFORMATION

For Industrial Use Only

Do not inhale exhaust gas at curing.

****

This materials safty data sheet is offered solely for your information , consideration and investigation . The data described in this MSDS consist of data on literature , our acquisitional data and analogical inference by data of similar chemical substance or product . Shin-Etsu Silicone Taiwan Co., Ltd provides no warranties , either express or implied , and assumes no responsibility for the accuracy or completeness of the data contained herein .

物質安全資料表
Material Safety Data Sheet

一、物品與廠商資料　　2008 年 06 月 05 日

物品名稱		快削黃銅棒
製造商	名稱：	宮前五金股份有限公司
	地址：	桃園縣龜山鄉 333 頂湖一街二十四號
	電話：	TEL: (03) 328-3068
	傳真：	FAX: (03) 328-2515

二、成分辨識資料

快削黃銅棒成分分析

元素	化學文摘社登記號碼 (CAS No.)	重量百分比 Wt(%)
Cu (銅)	7440-50-8	57.0~61.0
Pb (鉛)	7439-92-1	1.8~3.7
Fe (鐵)	7439-89-6	0.5 MAX
Fe+Sn (鐵+錫)	Sn: 7440-31-5	1.2 MAX
Zn (鋅)	7440-66-6	Rem

危害物質成分百分比:　0%

三、危害辨識資料

最重要危害效應	健康危害效應	不含有害人體之化學成分, 但長時間接觸皮膚會有輕微過敏反應. 塊體或棒材無危害性, 唯粉末粒子對眼鼻、上呼吸道及皮膚具刺激性. 吞食或大量吸入可能導致噁心及腸胃不適.
	環境影響	-
	物理及化學性危害	細粉末可燃
	特殊危害	-
物品危害分類		非危害物

四、急救措施

不同暴露途徑之急救方法:

吸入: 若吸入大量粉末, 立刻將患者移至乾淨空氣流通的場所並就醫.

皮膚接觸: 用大量清水沖洗, 或用肥皂清洗患部. 若未改善需就醫.

眼睛接觸: 立刻以大量清水沖洗眼睛15分鐘以上, 若異物感未減緩或有其他不適則就醫.

食入: 若誤食且患者意識清醒, 則立刻給予大量飲水並就醫. 若意識模糊則須立刻送醫.

對醫師之提示: 對不慎食入之患者, 考慮洗胃及提供氧氣.

五、滅火措施

適用滅火劑: 本產品無自燃性, 不可燃, 無爆發性, 火災時使用任何適於撲滅週遭火源之滅火器滅火.
滅火時可能遭遇之特殊危害: 注意其細粉遇火源可燃.
特殊滅火程序: -
消防人員之特殊防護設備: -

六、洩漏處理方法

個人應注意事項: 棒狀、線材、塊體不會溢漏.
環境注意事項: -
清理方法: 小心將粉末或顆粒掃起, 集中裝入適當容器內.

七、安全處置與儲存方法

處置: 避免產生粉塵, 操作時應穿戴適當之防護衣具, 避免眼睛及口鼻直接接觸粉塵. 搬運時應將棒材線材適當固定, 並注意機具及包裝荷重, 避免掉落.
儲存: 非危害性物質, 應放置於牢固之場所, 避免堆疊滑落.

八、暴露預防措施

工程控制: 操作處保持通風, 或加裝整體換氣裝置.

控制參數:

成分	最高容許濃度 OSHA PEL mg/m^3	國內規範容許濃度 mg/m^3
Cu	1.0 (粉塵)	1.0(粉塵)
Pb	0.05	-
Fe	5.0	-
Sn	2.0	2.0
Zn	15	5.0(氧化鋅)

個人防護設備:

呼吸防護: 一般狀況下不需要. 當濃度超過最高容許濃度時建議使用覆蓋全面之呼吸防護具.

手部防護: 手套, 或防割之橡膠手套

眼睛防護: 安全眼鏡或安全護目鏡

皮膚及身體防護: 工作鞋, 圍裙

衛生措施: 操作此產品時勿飲食

九、物理及化學性質

物質狀態: 固體	形狀: 黃色無味金屬光澤固體
顏色: 黃色金屬光澤	氣味: 無味
pH值: -	沸點/沸點範圍: -
分解溫度: -	閃火點: -
熔點: 875 ~1010 °C	
自燃溫度: -	爆炸界限: -
蒸氣壓: -	蒸氣密度: -
密度: 8.4~8.9 g/cc.	溶解度: -

十、安定性及反應性

安定性: 常溫常壓下安定
特殊狀況下可能之危害反應: 無
應避免之狀況: 避免產生粉塵
應避免之物質: 乙炔、氯、強酸等強力氧化劑
危害分解物: 與上述物質化學反應產生之氣體

十一、毒性資料

急毒性: -
局部效應: -
致敏感性: -
慢毒性或長期毒性:長期接觸或攝入高劑量的鉛可導致腎、血液、或神經系統受損. 但本產品的鉛含量與存在形式目前無證據顯示具毒性.
特殊效應: -

十二、生態資料

可能之環境影響: -

十三、廢棄處置方法

廢棄處置方法: 本產品成爲廢棄物時, 未被歸類爲有害事業廢棄物, 其處置依當地廢棄物處理法規辦理. 且屬於可回收之廢棄物, 可交由廢棄物回收處理業者回收.

十四、運送資料

國際運送規定: 無特殊規定
聯合國編號: 無
國內運送規定: 無特殊規定, 依一般道路交通安全規則辦理.
特殊運送方法及注意事項: 無

十五、法規資料

適用法規: 勞工安全衛生設施準則 勞工作業環境空氣中有害物容許濃度標準 事業廢棄物儲存清除處理方法及設施標準

十六、其他資料

本表爲收集目前相關資料編寫而成，其內容僅適用於本產品。在製作時已力求完美及正確，但錯誤恐仍難免。使用者請依應用需求，自行負責判斷其可用性，本公司不負任何責任。

MATERIAL SAFETY DATA SHEET - NO. A01

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

M-25 and M-65 Alloys

SYNONYMS Copper Beryllium Alloy
Beryllium Copper Alloy
Copper Alloy

24-HR EMERGENCY ASSISTANCE
Transportation Emergency
Call Chemtrec at:
Domestic: (800) 424-9300
International: (703) 527-3887
Other Emergency
Call Brush Wellman at: (800) 862-4118

Revised: 01-02-08
Replaces: MSDS A01 (01-12-06)

CHEMICAL FAMILY Alloy

CUSTOMER SERVICE
Brush Wellman Inc.
Product Stewardship Department
17876 St. Clair Avenue
Cleveland, Ohio 44110
Phone: (800) 862-4118
Fax: (216) 383-4091
Websites www.brushwellman.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL COMPOSITION (Percent by Weight)

BRUSH WELLMAN PRODUCT NAME OR ALLOY NUMBER (Copper Development Association UNS Number)			
CONSTITUENTS	CAS Numbers	M25 (C17300)	M65 (C17465)
Copper	7440-50-8	97.1 - 97.8	97.9 - 98.6
Beryllium	7440-41-7	1.8 - 2	0.2 - 0.5
Nickel	7440-02-0	--	1 - 1.4
Lead	7439-92-1	0.2 - 0.6	0.2 - 0.6
Cobalt	7440-48-4	0.2 - 0.35	--

Hazard Communication regulations of the U.S. Occupational Safety and Health Administration apply to this product.

NOTE: As used in this Material Safety Data Sheet, the term articulate? refers to dust, mist, fume, fragments, particles and/or powder.

3. HAZARD IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Metallic product which poses little or no immediate hazard in solid form. See label in Section 16. If the material is involved in a fire; pressure-demand self-contained breathing apparatus and

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protective clothing must be worn by persons potentially exposed to the airborne particulate during or after a fire.

3.2 POTENTIAL HEALTH EFFECTS

Exposure to the elements listed in Section 2 by inhalation, ingestion, and skin contact can occur when melting, casting, dross handling, pickling, chemical cleaning, heat treating, abrasive cutting, welding, grinding, sanding, polishing, milling, crushing, or otherwise heating or abrading the surface of this material in a manner which generates particulate.

Exposure may also occur during repair or maintenance activities on contaminated equipment such as: furnace rebuilding, maintenance or repair of air cleaning equipment, structural renovation, welding, etc.

Particulate depositing on hands, gloves, and clothing, can be transferred to the breathing zone and inhaled during normal hand to face motions such as rubbing of the nose or eyes, sneezing, coughing, etc.

3.2.1. Inhalation

Particulate containing those elements listed in Section 2 can cause irritation to the nose, throat, lungs, and mucous membranes. Inhalation of this particulate may cause metal fume fever (high temperature, metallic taste, nausea, coughing, general weakness, muscle aches, and exhaustion), bronchitis, chills, decreased pulmonary function, and asthma-like symptoms.

Beryllium: The beryllium in this product is not known to cause acute health effects. Inhaling particulate containing beryllium may cause a serious, chronic lung disease called Chronic Beryllium Disease (CBD) in some individuals. See section 3.2.5 Chronic (long-term health effects).

Cobalt: May cause asthmatic attacks due to allergic sensitization of the respiratory tract. May cause asthma and shortness of breath.

Copper: Inhalation of particulate containing metallic copper can cause ulceration and perforation of the nasal septum.

Lead: Lead can be absorbed through the respiratory system. In cases of acute exposure, symptoms such as metallic taste, chest and abdominal pain, and increased lead blood levels may follow.

Nickel: Can cause headaches, dizziness, and difficult breathing. Inhalation of nickel and nickel compounds is associated with nasal and lung damage and cancer. Symptoms may include coughing, sore throat, and shortness of breath.

3.2.2. Ingestion

Ingestion can occur from hand, clothing, food and drink contact with particulate during hand to mouth activities such as eating, drinking, smoking, nail biting, etc.

Beryllium: The health effect of ingestion of beryllium in the form found in this product is unknown.

Cobalt: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause allergic reaction.

Copper: Copper ingestion causes nausea, vomiting, abdominal pain, metallic taste, and diarrhea. Ingestion of large doses may cause stomach and intestine ulceration, jaundice, and kidney and liver damage.

Lead: POISON! The symptoms of lead poisoning include abdominal pain and spasms, nausea, vomiting, headache. Acute poisoning can lead to muscle weakness, "lead line" on the gums, metallic taste, loss of appetite, insomnia, dizziness, and high lead levels in blood and urine with shock, coma and death in extreme cases.

Nickel: Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

3.2.3. Skin

Skin contact with this material may cause, in some sensitive individuals, an allergic dermal response. Skin contact may cause irritation. Symptoms include redness, itching and pain.

Beryllium: Particulate that becomes lodged under the skin has the potential to induce sensitization and skin lesions.

Cobalt: Prolonged and/or repeated contact may cause dermatitis.

Copper: Particulate may cause a greenish-black skin discoloration.

Lead: Lead and lead compounds may be absorbed through the skin on prolonged exposure; the symptoms of lead poisoning described for ingestion exposure may occur.

Nickel: May cause allergic dermatitis. Nickel is a contact allergen and sensitizer.

3.2.4. Eyes

Exposure may result from direct contact with airborne particulate or contact to the eye with contaminated hands or clothing. Damage can result from irritation or mechanical injury to the eyes by particulate.

Copper: Particulate in the eyes may cause discoloration.

Lead: Absorption can occur through eye tissues.

3.2.5. Chronic (long-term health effects)

Beryllium: Inhaling particulate containing beryllium may cause a serious, chronic lung disease called chronic beryllium disease (CBD) in some individuals. Over time lung disease can be fatal. Chronic beryllium disease is a hypersensitivity or allergic condition in which the tissues of the lungs become inflamed. This inflammation, sometimes with accompanying fibrosis (scarring), may restrict the exchange of oxygen between the lungs and the bloodstream. Medical science suggests that CBD may be related to genetic factors.

Cobalt: Repeated exposure may cause allergic respiratory reaction (asthma). Chronic inhalation of particulate may lead to restricted pulmonary function and lung fibrosis (scarring). Chronic ingestion may result in heart damage and/or failure, vomiting, convulsions and thyroid enlargement. Repeated exposure may cause sensitization dermatitis.

Copper: Prolonged or repeated exposure to copper can discolor skin and hair and irritate the skin; may cause mild dermatitis, runny nose, and irritation of the mucous membranes. Repeated ingestion may damage the liver and kidneys. Repeated inhalation can cause chronic respiratory disease.

Lead: Lead absorption in the body is cumulative. The concentration of lead in the blood is an important aspect of assessing exposure and potential adverse health effects. Excessive concentration may cause neuromuscular dysfunction accompanied by signs of weakness. Chronic lead poisoning has been associated with kidney disorders.

Nickel: Prolonged exposure to excessive concentrations of particulate may cause chronic pulmonary disorders. Nickel and certain nickel compounds are considered carcinogenic and noted for producing nasal and lung cancer. Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration.

3.2.6. Carcinogenic References

Beryllium: The International Agency for Research on Cancer (IARC) lists beryllium as a Group 1 ? Known Human Carcinogen. The National Toxicology Program (NTP) lists beryllium as known to be human carcinogens. The ACGIH lists beryllium as an A1 ? Confirmed Human Carcinogen.

IARC lists beryllium as a known human carcinogen (Group1) and notes that the work environment of workers involved in refining, machining and producing beryllium metal was associated with an increased risk of lung cancer, he greater excess was in workers hired before 1950 when exposures to beryllium in the work place were relatively uncontrolled and much higher than in subsequent decades? and he highest risk for lung cancer being observed among individuals diagnosed with acute beryllium-induced pneumonitis, who represent a group that had the most intense exposure to beryllium.? IARC further noted that rior to 1950, exposure to beryllium in working environments was usually very high, and concentrations exceeding 1 mg/m3 [1000 micrograms per cubic meter] were not unusual.?

Cobalt: The International Agency for Research on Cancer (IARC) lists cobalt as a Group 2B ? Possibly Carcinogenic to Humans. ACGIH lists elemental cobalt as an A3 ? Animal Carcinogen. OSHA lists cobalt as a possible select carcinogen.

Lead: The International Agency for Research on Cancer (IARC) lists lead as a Group 2B ? Possibly Carcinogenic to Humans. The National Toxicology Program (NTP) lists lead as reasonably anticipated to be a human carcinogen. The ACGIH lists lead and inorganic lead compounds as an A3 ? Animal Carcinogen.

Nickel: The International Agency for Research on Cancer (IARC) lists nickel as a Group 2B ? Possibly Carcinogenic to Humans. The National Toxicology Program (NTP) lists nickel as reasonably anticipated to be a human carcinogen. The ACGIH lists elemental nickel as an A5 ? Not Suspected as a Human Carcinogen and insoluble nickel compounds as an A1 ? Confirmed Human Carcinogen.

3.2.7. Medical Conditions Aggravated by Exposure

Persons with impaired pulmonary function, airway diseases, or conditions such as asthma, emphysema, chronic bronchitis, etc. may incur further impairment if particulate is inhaled. If prior damage or disease to the neurologic (nervous), circulatory, hematologic (blood), or urinary (kidney) systems has occurred, proper screening or examinations should be conducted on individuals who may be exposed to further risk where handling and use of this material may cause exposure.

Beryllium: The effects of chronic beryllium disease on the lungs and heart are additive to the effects of other health conditions.

Copper: Persons with pre-existing skin disorders or impaired liver, kidney, or pulmonary function or pre-existing Wilson's disease may be more susceptible to the effects of this material.

Lead: Persons with pre-existing kidney, nerve or circulatory disorders or with skin or eye problems may be more susceptible to the effects of this substance.

Nickel: Skin contact with some nickel compounds in sensitive individuals may cause dermatitis (nickel itch).

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

See Ecological Information (Section 12)

4. FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

INHALATION: Breathing difficulty caused by inhalation of particulate requires immediate removal to fresh air. If breathing has stopped, perform artificial respiration and obtain medical help.

INGESTION: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

SKIN: Thoroughly wash skin cuts or wounds to remove all particulate debris from the wound. Seek medical attention for wounds that cannot be thoroughly cleansed. Treat skin cuts and wounds with standard first aid practices such as cleansing, disinfecting and covering to prevent wound infection and contamination before continuing work. Obtain medical help for persistent irritation. Material accidentally implanted or lodged under the skin must be removed.

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.2 NOTE TO PHYSICIANS

Treatment of Chronic Beryllium Disease: There is no known treatment which will cure chronic beryllium disease. Prednisone or other corticosteroids are the most specific treatment currently available. They are directed at suppressing the immunological reaction and can be effective in diminishing signs and symptoms of chronic beryllium disease. In cases where steroid therapy has had only partial or minimal effectiveness, other immunosuppressive agents, such as cyclophosphamide, cyclosporine, or methotrexate, have been used. These latter agents remain investigational. Further, in view of the potential side effects of all the immunosuppressive medications, including steroids such as prednisone, they should be used only under the direct care of a physician. In general, these medications should be reserved for cases with significant symptoms and/or significant loss of lung function. Other symptomatic treatment, such as oxygen, inhaled steroids or bronchodilators, may be prescribed by some physicians and can be effective in selected cases.

The decision about when and with what medication to treat is a judgment situation for individual physicians. For the most part, treatment is reserved for those persons with symptoms and measurable loss of lung function. The value of starting oral steroid treatment, before signs or symptoms are evident, remains a medically unresolved issue.

The effects of continued low exposure to beryllium are unknown for individuals who are sensitized to beryllium or who have a diagnosis of chronic beryllium disease. It is generally recommended that persons who are sensitized to beryllium or who have CBD terminate their occupational exposure to beryllium.

5. FIRE FIGHTING MEASURES

Flash Point	Non-combustible as a solid. No ignition as layer of sub 44 micron particles of copper.
Explosive Limits	Not applicable to solids. No ignition as cloud of sub 44 micron particles of nominal copper.
Extinguishing Media	This material is non-combustible. Use extinguishing media appropriate to the surrounding fire.
Unusual Fire and Explosion Hazards	Do not use water to extinguish fires around operations involving molten metal due to the potential for steam explosions.
Special Fire Fighting Procedures	Pressure-demand self-contained breathing apparatus must be worn by firefighters or any other persons potentially exposed to the particulate released during or after a fire.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

If this material is a particulate, establish a restricted entry zone based on the severity of the spill. Persons entering the restricted zone must wear adequate respiratory protection and protective clothing appropriate for the severity of the spill (see Section 8). Cleanup spills with a vacuum system utilizing a high efficiency particulate air (HEPA) filtration system followed by wet cleaning methods. Special precautions must be taken when changing filters on HEPA vacuum cleaners used to clean up hazardous materials. Be careful to minimize airborne generation of particulate and avoid contamination of air and water. Depending upon the quantity of material released into the environment, the incident may be required to be reported to the National Response Center at (800) 424-8802 as well as the State Emergency Response Commission and Local Emergency Planning Committee.

7. HANDLING AND STORAGE

7.1 HANDLING

Particulate may enter the body through cuts, abrasions or other wounds on the surface of the skin. Wear gloves when handling parts with loose surface particulate or sharp edges.

7.2 STORAGE

Store in a dry area.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

8.1 VENTILATION AND ENGINEERING CONTROLS

Whenever possible, the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne particulate. Where utilized, exhaust inlets to the ventilation system must be positioned as close as possible to the source of airborne generation. Avoid disruption of the airflow in the area of a local exhaust inlet by equipment such as a man-cooling fan. Check ventilation equipment regularly to ensure it is functioning properly. Provide training on the use and operation of ventilation to all users. Use qualified professionals to design and install ventilation systems.

8.2 WORK PRACTICES

Develop work practices and procedures that prevent particulate from coming in contact with worker skin, hair, or personal clothing. If work practices and/or procedures are ineffective in controlling airborne exposure or visual particulate from deposition on skin, hair, or clothing, provide appropriate cleaning/washing facilities. Procedures should be written that clearly communicate the facility requirements for protective clothing and

personal hygiene. These clothing and personal hygiene requirements help keep particulate from being spread to non-production areas or from being taken home by the worker. Never use compressed air to clean work clothing or other surfaces.

Fabrication processes may leave a residue of particulate on the surface of parts, products or equipment that could result in employee exposure during subsequent material handling activities. As necessary, clean loose particulate from parts between processing steps. As a standard hygiene practice, wash hands before eating or smoking.

To prevent exposure, remove surface scale or oxidation formed on cast or heat treated products in an adequately ventilated process prior to working the surface.

8.3 WET METHODS

Machining operations are usually performed under a liquid lubricant/coolant flood which assists in reducing airborne particulate. However, the cycling through of machine coolant containing finely divided particulate in suspension can result in the concentration building to a point where the particulate may become airborne during use. Certain processes such as sanding and grinding may require complete hooded containment and local exhaust ventilation. Prevent coolant from splashing onto floor areas, external structures or operators? clothing. Utilize a coolant filtering system to remove particulate from the coolant.

8.4 RESPIRATORY PROTECTION

When airborne exposures exceed or have the potential to exceed the occupational limits shown in Section 8.13, approved respirators must be used as specified by an Industrial Hygienist or other qualified professional. Respirator users must be medically evaluated to determine if they are physically capable of wearing a respirator. Quantitative and/or qualitative fit testing and respirator training must be satisfactorily completed by all personnel prior to respirator use. Users of tight fitting respirators must be clean shaven on those areas of the face where the respirator seal contacts the face. Exposure to unknown concentrations of particulate requires the wearing of a pressure-demand airline respirator or pressure-demand self-contained breathing apparatus (SCBA). Use pressure-demand airline respirators when performing jobs with high potential exposures such as changing filters in a baghouse air cleaning device.

8.5 OTHER PROTECTIVE EQUIPMENT

Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities such as machining, furnace rebuilding, air cleaning equipment filter changes, maintenance, furnace tending, etc. Contaminated work clothing and overgarments must be managed in a controlled manner to prevent secondary exposure to workers of third parties, to prevent the spread of particulate to other areas, and to prevent particulate from being taken home by workers.

8.6 PROTECTIVE GLOVES

Wear gloves to prevent contact with particulate or solutions. Wear gloves to prevent metal cuts and skin abrasions during handling.

8.7 EYE PROTECTION

Wear safety glasses, goggles, face shield, or welder helmet when risk of eye injury is present, particularly during melting, casting, machining, grinding, welding, powder handling, etc.

8.8 HOUSEKEEPING

Use vacuum and wet cleaning methods for particulate removal from surfaces. Be certain to de-energize electrical systems, as necessary, before beginning wet cleaning. Use vacuum cleaners with high efficiency

particulate air (HEPA). Do not use compressed air, brooms, or conventional vacuum cleaners to remove particulate from surfaces as this activity can result in elevated exposures to airborne particulate. Follow the manufacturer instructions when performing maintenance on HEPA filtered vacuums used to clean hazardous materials.

8.9 MAINTENANCE

During repair or maintenance activities the potential exists for exposures to particulate in excess of the occupational standards. Under these circumstances, protecting workers can require the use of specific work practices or procedures involving the combined use of ventilation, wet and vacuum cleaning methods, respiratory protection, decontamination, special protective clothing, and when necessary, restricted work zones.

8.10 WELDING

In accordance with OSHA regulation 29 CFR 1910.252 welding of materials containing beryllium is regulated as follows: Welding or cutting indoors, outdoors, or in confined spaces involving beryllium containing base or filler metals shall be done using local exhaust ventilation and pressure-demand airline respirators unless atmospheric tests under the most adverse conditions have established that the workers? exposure is within the acceptable concentrations defined by 29 CFR 1910.1000. In all cases, workers in the immediate vicinity of the welding or cutting operations shall be protected as necessary by local exhaust ventilation or airline respirators.

8.11 EXPOSURE CHARACTERIZATION

Determine exposure to airborne particulate by air sampling in the employee breathing zone, work area, and department. Utilize an Industrial Hygienist or other qualified professional to specify the frequency and type of air sampling. Develop and utilize a sampling strategy which identifies the extent of exposure variation and provides statistical confidence in the results. Conduct an exposure risk assessment of processes to determine if conditions or situations exist which dictate the need for additional controls or improved work practices. Make air sample results available to employees.

8.12 MEDICAL SURVEILLANCE

Beryllium: Medical surveillance for beryllium health effects includes (1) skin examination, (2) respiratory history, (3) examination of the lungs, (4) lung function tests (FVC and FEV1), and (5) periodic chest x-ray. In addition, a specialized, specific, immunological blood test, the beryllium blood lymphocyte proliferation test (BLPT), is available to assist in the diagnosis of beryllium related reactions. Individuals who have an abnormal BLPT are normally referred to a lung specialist for additional specific tests to determine if chronic beryllium disease is present. Note: Substantial inter- and intra-laboratory disagreement exists among the laboratories that conduct this test. The BLPT does not at this time meet the criteria for a screening test. Despite its limitations however, the BLPT remains a useful disease surveillance tool.

Lead: Refer to the OSHA substance-specific standard for more information on medical surveillance and record keeping requirements. (29 CFR 1910.1025).

8.13 RISK FACTORS

Specific genetic factors have been identified and have been shown to increase an individual susceptibility to CBD. Medical testing is available to detect genetic factors in individuals.

8.14 OCCUPATIONAL EXPOSURE LIMITS

Brush Wellman recommends following good industrial hygiene practice which includes reducing airborne exposures to the lowest feasible level for all constituents in this product. Brush Wellman recommends that users of beryllium-containing materials maintain worker exposures to airborne beryllium to levels reliably below its recommended exposure guideline (REG) of 0.0002 milligrams beryllium per cubic meter of air.

CONSTITUENTS	OSHA*			ACGIH*		NIOSH RTECS NUMBER
	PEL	CEILING	PEAK	TLV	TLV-STEL	
Beryllium	0.002	0.005	0.025	0.002	0.01	DS1750000
Cobalt	0.1	N/A	N/A	0.02	N/A	GF8750000
Copper Dust & Mist	1	N/A	N/A	1	N/A	GL5325000
Copper Fume	0.1	N/A	N/A	0.2	N/A	GL5325000
Lead	0.05	N/A	N/A	0.05	N/A	OF7525000
Nickel	1	N/A	N/A	1.5	N/A	QR5950000

*ALL CONCENTRATIONS ARE IN MILLIGRAMS PER CUBIC METER OF AIR
(at the concentrations noted above, these constituents may not be visible to the human eye)

A leading scientific body recommending occupational standards is the American Conference of Governmental Industrial Hyglenists (ACGIH). The ACGIH recommends standards for all listed substances. The ACGIH defines a threshold limit value (standard) as follows: hreshold Limit Values refer to airborne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects. Because of wide variation in individual susceptibility, however, a small percentage of workers may experience discomfort from some substances at concentrations at or below the threshold limit; a smaller percentage may be affected more seriously by aggravation of a pre-existing condition or by development of an occupational illness.? ndividuals may also be hypersusceptible or otherwise unusually responsive to some industrial chemicals because of genetic factors, age, personal habits (smoking, alcohol, or other drugs), medication, or previous exposures. Such workers may not be adequately protected from adverse health effects from certain chemicals at concentrations at or below the threshold limits.?

ACGIH	=	American Conference of Governmental Industrial Hygienists
OSHA	=	Occupational Safety and Health Administration
PEL	=	Eight-Hour Average Permissible Exposure Limit (OSHA)
CEILING	=	Not To Be Exceeded Except For Peak Limit (OSHA)
PEAK	=	30-Minute Maximum Duration Concentration Above Ceiling Limit (OSHA)
TLV	=	Eight-Hour Average Threshold Limit Value (ACGIH)
TLV-STEL	=	15-Minute Short Term Exposure Limit (ACGIH)
CAS	=	Chemical Abstract Service
NIOSH	=	National Institute For Occupational Safety and Health
RTECS	=	Registry of Toxic Effects of Chemical Substances
NA	=	Not Applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Boiling Point (蚌):	Not Applicable	Radioactivity:	Not Applicable
Evaporation Rate:	Not Applicable	Solubility:	None
Freezing Point (蚌):	Not Applicable	Sublimes At (蚌):	Not Applicable
Odor:	None	Vapor Density (Air = 1):	Not Applicable
pH:	Not Applicable	Vapor Pressure (mmHg):	Not Applicable
Physical State:	Solid	% Volatiles By Volume:	None

PHYSICAL PROPERTIES			
Alloy Number/Product Name	Color	Melting Point (蚌)	Density (lb/in3)
M25 (C17300)	Brass	1600	0.302
M65 (C17465)	Brass	1877	0.318

10. STABILITY AND REACTIVITY

General Reactivity	The material is stable
Incompatibility (materials to avoid)	Avoid contact with mineral acids and oxidizing agents which may generate hydrogen gas. Hydrogen gas can be an explosion hazard.
Hazardous Decomposition Products	None under normal conditions of use.
Hazardous Polymerization	Will not occur

11. TOXICOLOGICAL INFORMATION

For questions concerning toxicological information, write to: Medical Director, Brush Wellman Inc., 14710 West Portage River South Road, Elmore, Ohio 43416-9502.

12. ECOLOGICAL INFORMATION

This material can be recycled; contact your Sales Representative.

13. DISPOSAL CONSIDERATIONS

13.1 BYPRODUCT RECYCLING

When recycled (used in a process to recover metals), this material is not classified as hazardous waste under federal law. Seal particulate or particulate containing materials inside two plastic bags, place in a DOT approved container, and label appropriately.

13.2 SOLID WASTE MANAGEMENT

When spent products are declared solid wastes (no longer recyclable), they must be labeled, managed and disposed of, in accordance with federal, state and local requirements. This material may contain one of the following metals regulated under RCRA; chromium, or lead. See Section 2 for chemical composition.

14. TRANSPORT INFORMATION

There are no U.S. Department of Transportation hazardous material regulations which apply to the packaging and labeling of this product as shipped by Brush Wellman.

Hazard Communication regulations of the U.S. Occupational Safety and Health Administration require this product be labeled.

15. REGULATORY INFORMATION

15.1 UNITED STATES FEDERAL REGULATIONS

15.1.1. Occupational Safety and Health Administration (OSHA)

Air contaminants, 29 CFR 1910.1000

Hazard Communication Standard, 29 CFR 1910.1200
OSHA Lead Standard 29 CFR 1910.1025

15.1.2. Environmental Protection Agency (EPA)

AMBIENT AIR EMISSIONS: Foundries melting alloys containing beryllium are subject to the National Emission Standard for Beryllium as promulgated by EPA (40 CFR 61, Subpart C). Facilities machining alloys containing greater than 5% beryllium also are subject to the National Emission Standard for beryllium. The National Emission Standard for beryllium is 0.01 micrograms per cubic meter (30 day average) in ambient air for those production facilities which have been qualified to be regulated through ambient air monitoring. Other facilities must meet a 10 gram per 24-hour total site emission limit. Most process air emission sources will require an air permit from a local and/or state air pollution control agency. The use of air cleaning equipment is recommended to achieve the permissible emission. Provide tempered makeup air to prevent excessive negative pressure in a building. Direct recycling of filtered process exhaust air is not recommended. Locate plant exhausts so as not to re-enter the plant through makeup air or other inlets. Regular maintenance and inspection of air cleaning equipment and monitoring of operating parameters is recommended to ensure system efficiency is maintained.

WASTEWATER: Wastewater regulations can vary considerably. Contact your local and state governments to determine their requirements.

TOXIC SUBSTANCES CONTROL ACT: This material is a mixture. Component(s) of this material is/are listed on the TSCA Chemical Substance Inventory of Existing Chemical Substances

SARA TITLE III REPORTING REQUIREMENTS: On February 16, 1988 the U.S. Environmental Protection Agency (EPA) issued a final rule that implements the requirements of the Superfund Amendments and Reauthorization Act (SARA) Title III, Section 313 (53) Federal Register 4525. Title III is the portion of SARA concerning emergency planning and community right-to-know issues. Section 313 covers annual emission reporting on specific chemicals which are manufactured, processed or used at certain U.S. Industrial facilities.

Brush Wellman products are reportable under the Section 313 category of ompounds and/or Mixtures.? This product contains one or more of the following reportable constituents: Beryllium, Cobalt, Copper, and Lead. The specific chemical makeup, concentration by weight and the Chemical Abstracts Services number for each of the constituents in this product is provided in Section 2.

You may obtain additional information by calling the EPA SARA Title III Hotline at 1-800-535-0202 (or 703 412 9810).

15.2 STATE REGULATIONS

Beryllium

- Is listed on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota and Massachusetts.
- The following statements are made in order to comply with the California State Drinking Water Act - Warning: This product contains BERYLLIUM, a chemical known to the state of California to cause cancer.
- California No Significant Risk Level: CAS# 7440-41-7: No significant risk level = 0.1 ug/day

Cobalt

- Is listed on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
- The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act WARNING: This product contains COBALT, a chemical known to the state of California to cause cancer.
- California No Significant Risk Level: Not listed.

Copper

- Is listed on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts. California No Significant Risk Level: Not listed.

Lead

- Is listed on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
- The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act - WARNING: This product contains LEAD, a chemical known to the state of California to cause cancer. WARNING: This product contains LEAD, a chemical known to the state of California to cause birth defects or other reproductive harm.
- California No Significant Risk Level: NOEL = 0.5 ug/day

Nickel

- Is listed on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
- The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act - WARNING: This product contains NICKEL, a chemical known to the state of California to cause cancer.
- California No Significant Risk Level: Not listed.

15.3 CANADA

Constituent	DSL/NDSL	WHMIS Classification	Ingredient Disclosure List
Beryllium	Yes/No	D2A,D2B	Yes
Cobalt	Yes/No	D2A,D2B	Yes
Copper	Yes/No	D2B	Yes
Lead	Yes/No	D2A	Yes
Nickel	Yes/No	D2A	Yes

16. OTHER INFORMATION

Following is the label which accompanies this product during shipment.

A01

M25 and M65 Alloys

⚠ WARNING ⚠

INHALING DUST OR FUMES MAY CAUSE CHRONIC BERYLLIUM DISEASE, A SERIOUS CHRONIC LUNG DISEASE, IN SOME INDIVIDUALS. CANCER HAZARD. OVER TIME, LUNG DISEASE AND CANCER CAN BE FATAL. TARGET ORGAN IS PRIMARILY THE LUNG.

READ THE MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL.

This product contains beryllium and lead, and may contain nickel or cobalt. Excessive inhalation or ingestion of lead can cause acute lead poisoning.

- If processing or recycling produces particulate, use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding, grinding, abrasive sawing, sanding and polishing. Any activity which abrades the surface of this material can generate airborne particulate.
- The Occupational Safety and Health Administration (OSHA) has set mandatory limits on occupational exposures.
- Copper beryllium, in solid form and as contained in finished products presents no special health risks.
- Sold for manufacturing purposes only. This product can be recycled; contact your sales representative.

The Occupational Safety and Health Administration requires employers to provide training in the proper use of this product.

For further information, please telephone or write to: Product Stewardship Department, Brush Wellman Inc., 17876 St. Clair Avenue, Cleveland, Ohio 44110, telephone: (800) 862-4118, www.brushwellman.com. For transportation emergency call Chemtrec at (800) 424-9300.

A01

*Label may vary in size

*Label color (light blue edge with black lettering)

This MSDS has been revised following the guidelines outlined in the American National Standard for Hazardous Industrial Chemicals - aterial Safety Data Sheets - Preparation.? Z400.1-1998

MSDS Status: Added recommended exposure guideline to Section 8.14

IMPORTANT: If you have any questions or require additional information regarding the materials described in this Material Safety Data Sheet, please telephone or write to the Product Stewardship Department at the location given on page 1. Additional product safety information, such as Safety Facts, is available from your sales representative or at www.brushwellman.com.

MATERIAL SAFETY DATA SHEET

IDENTITY

Tombo # 9002 NAFLON PTFE ROD

DESCRIPTION

This product is manufactured with virgin PTFE powder by ram extrusion or compression molding process.

SECTION 1

Manufacture's Name: NICHIAS Corporation

Address: 1-26, Shibadaimon 1-chome, Minato-ku Tokyo 105-8555, Japan

Emergency Telephone Number: +81-3-3433-7248

Telephone Number for Information: +81-3-3433-7248

Date Prepared: January 26, 1998

SECTION 2 – Hazardous Ingredients/Identity Information

INGREDIENT	%	HAZARD DATA TLV-TWA
Polytetrafluoroethylene (PTFE) [CAS# 9002-84-0]	100	Thermal decomposition of the fluorocarbon chain in air leads to the formation of oxidized products containing carbon, fluorine and oxygen. Because these products decompose in part by hydrolysis in alkaline solution, they can be quantitatively provided an index of exposure. No TLVs are recommended at this time, but air concentration should be controlled as low as possible.

Hazard Data Source:

ACGIH Threshold Limit Values for 1997-98

SECTION 3 - Physical/Chemical Characteristics

Boiling Point:	N/A	**Appearance:**	white
Melting Point (°C):	322-332	**Odor:**	No odor
Solubility in Water:	Insoluble	**Service Temperature (°C):**	Max. 260
Specific Gravity (25°C):	2.13-2.20		

SECTION 4 - Fire and Explosion Hazard Data

Flash Point (Method used): non-flammable (Complies with U. L. 94V-0)

Explosion Point (Method used): None

Extinguishing Media: Use that which is appropriate for the surrounding fire.

Tombo # 9002

SECTION 9- Special Precautions

Do not use for body transplantation and a contact with living body tissues and body fluids.

The information provided on this Material Safety Data Sheet is based on ACGIH Threshold Limit Values 1997-98 as of the date of issuance of the sheets. The purchaser shall follow the up-to-date rules and also your local rules, laws, regulations, etc.

Obey up-to-date local rules, laws, regulations, etc.

DATE : 26 / 1 / 1998

Masayuki TOMITA
Environmental Control Section/Technical Division
NICHIAS CORPORATION-Manufacture
Signed by Officer of the Company

Special Fire and Fighting Procedures: Persons exposed to thermal decomposition products of this material should wear self-contained breathing apparatus, full protective equipment, and also gloves made of chloroprene rubber.

Unusual Fire and Explosion Hazards: Fluorocarbon polymer are non-flammable in air and will not propagate flame. However under high temperature they can yield toxic particles, fumes, and gases.
In case of fire, escape to the windward.

SECTION 5 - Reactivity Data

Stability: Stable under normal conditions, but it may react with molten alkali such as metal sodium, and fluorine at high temperature and pressure.

Hazardous Decomposition or By-products: Above 260°C this product thermally degrades at a rate dependent on the temperature, releasing toxic materials.

SECTION 6 - Health Hazard Data

Hazard Information:

Unheated fluorocarbon polymer product is inert, and there are no known instances of health hazard, when handling the unheated product. When heated at high temperature, it will thermally degrade, decompose, and produce toxic fumes. Inhalation of such fumes will cause "Polymer Fume Fever", which has symptoms very similar to influenza and can include headache, cough, fever, chills, chest discomfort. The symptoms do not occur until several hours after exposure and may pass within 36 to 48 hours, even in absence of treatment.

Carcinogenicity (Polytetrafluoroethylene):

IARC Monographs? 3 – Not classifiable as its carcinogenicity to humans

SECTION 7 - Precaution for Safe Handling and Use

Step to be taken in handling this product:

Keep away from heat and sources of ignition.

Precaution on waste disposal:

Do not incinerate. Obey local rules, laws, regulations.

SECTION 8 - Control Measures

For normal use, protective gears, such as masks, respirators, etc. are not specially needed. When used above 260°C, toxic fumes will be produced from thermal degradation and/or decomposition of fluorocarbon polymers and therefore proper ventilation equipment shall be installed and used.

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KE-971T**

Silicone (SI), uncured w/one or two catalysts

** - May be followed by the suffix U

UL 阻燃等级		
0.750 mm, ALL	HB	UL 94
0.750 mm, ALL	HB75	IEC 60695-11-10, -20
RTI Elec (0.750 mm)	150 °C	UL 746
RTI Imp (0.750 mm)	150 °C	UL 746
RTI Str (0.750 mm)	150 °C	UL 746

Form Number: E174951-226245

Report Date: 1/20/1999
Last Revised: 5/12/2010

ANSI/UL 94 小规模测试数据与建筑材料、家具和有关内容不相关。ANSI/UL 94
小规模测试数据仅用于确定成品设备和装置的组件和部件中所用塑料材料的易燃性，其中组合的可接受性由 UL 确定。

ONLINE CERTIFICATIONS DIRECTORY

QMMY2.E249493
Fabricated Parts - Component

Page Bottom

Fabricated Parts - Component

See General Information for Fabricated Parts - Component

SUZHOU NICHIAS INDUSTRIAL PRODUCTS CO LTD E249493
SUZHOU INDUSTRIAL PARK
208 QING QIU ST
SUZHOU, JIANGSU 215126 CHINA

Fabricated plastic parts, Recognition based on material traceability, UL assigned designation F1071.

Marking: Company name and UL assigned code designation on part, shipping carton, or spec sheet in shipping carton.
Last Updated on 2004-08-18

Questions? Print this page Notice of Disclaimer Page Top

Test Report No. F690101/LF-CTSAYAA12-18173

Issued Date: 2012. 05. 11

To: **STYROLUTION KOREA LTD.**
472-9
Sanggae-dong
Nam-gu
Ulsan
Korea

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

SGS File No.	:	AYAA12-18173
Product Name	:	LURAN S 778T
Item No./Part No.	:	LURAN S 778T
Received Date	:	2012. 05. 08
Test Period	:	2012. 05. 09 to 2012. 05. 11
Test Results	:	For further details, please refer to following page(s)
Test Performed	:	SGS Korea tested the sample(s) selected by applicant with following results.

SGS Korea Co. Ltd.

Timothy Jeon
Jinhee Kim
Cindy Park
Jerry Jung/ Testing Person

Jeff Jang / Chemical Lab Mgr

Sample No. : AYAA12-18173.001
Sample Description : LURAN S 778T
Item No./Part No. : LURAN S 778T
Materials : N/A

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	With reference to US EPA 3052(1996), US EPA 6010B(1996), ICP	0.5	N.D.
Mercury (Hg)	mg/kg	With reference to US EPA 3052(1996), US EPA 6010B(1996), ICP	2	N.D.
Lead (Pb)	mg/kg	With reference to US EPA 3052(1996), US EPA 6010B(1996), ICP	5	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	With reference to US EPA 3060A(1996), US EPA 7196A(1992), UV	1	N.D.

Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Monobromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	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

Sample No. : AYAA12-18173.001
Sample Description : LURAN S 778T
Item No./Part No. : LURAN S 778T
Materials : N/A

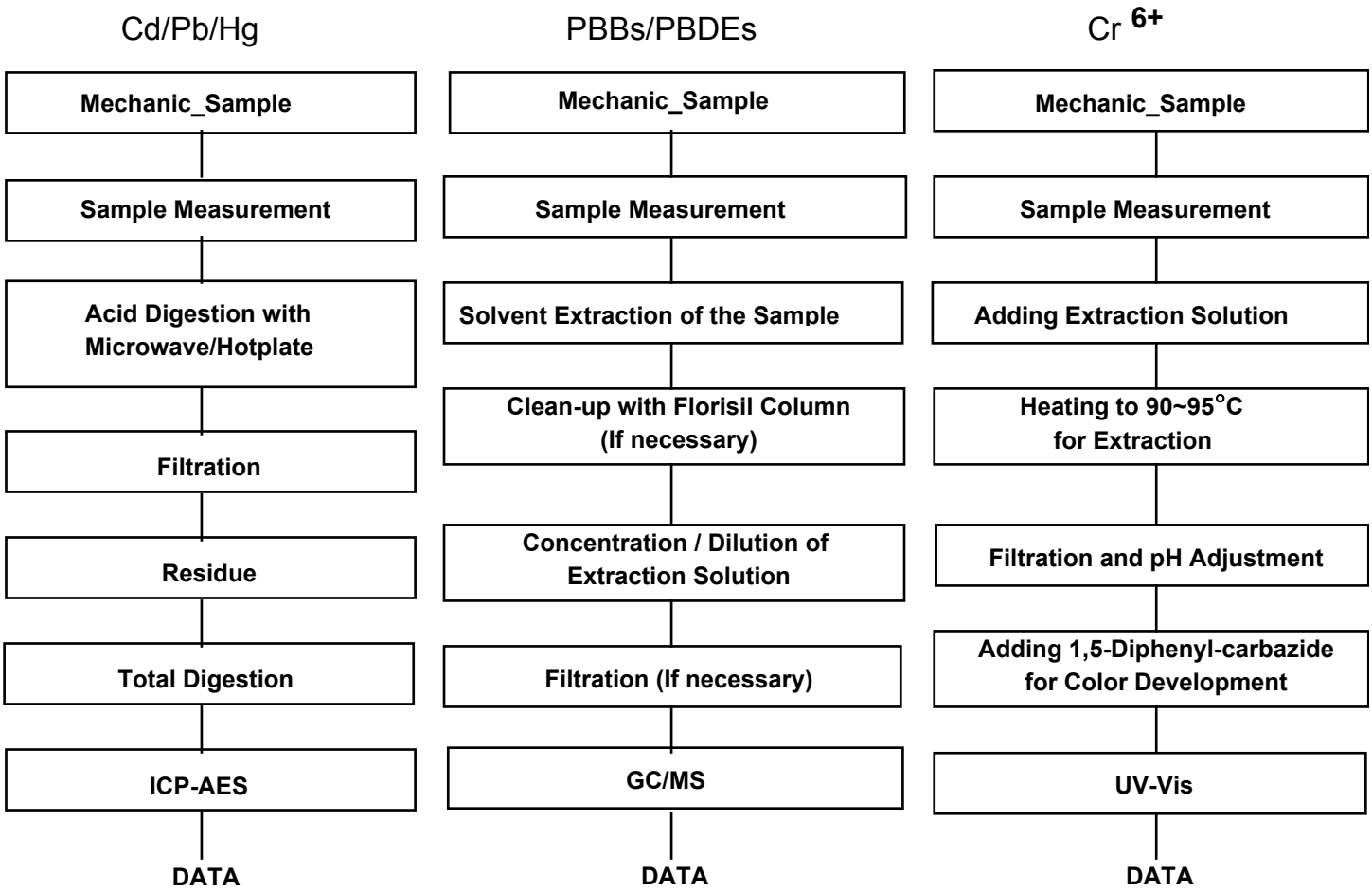
Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Nonabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.

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) Negative = Undetectable / Positive = Detectable

Testing Flow Chart for RoHS:Cd/Pb/Hg/Cr^{6+} /PBBs&PBDEs Testing



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

Section Chief : Gilsae Yi

*** 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

測試報告
Test Report

號碼(No.) : CE/2013/14616　　日期(Date) : 2013/01/28　　頁數(Page): 1 of 4

宮前五金股份有限公司
KUON CHEN HARDWARE CO., LTD.
桃園縣龜山鄉頂湖一街24號
NO. 24, DINGHU 1ST ST, GUISHAN SHIANG, TAOYUAN COUNTY 333, 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)	:	FREE CUTTING BRASS BAR
樣品型號(Style/Item No.)	:	C3604
收件日期(Sample Receiving Date)	:	2013/01/21
測試期間(Testing Period)	:	2013/01/21 TO 2013/01/28

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測試需求(Test Requested)： 依據客戶要求，參考RoHS 2011/65/EU Annex II 指令進行鎘，鉛，汞，六價鉻測試.
(As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample.)

測試方法(Test Method)　： 參考IEC 62321: 2008方法 / With reference to IEC 62321: 2008.

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

SGS TAIWAN LTD
SGS
TAIWAN

Nicole Chien / Supervisor
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

測試報告
Test Report

宮前五金股份有限公司
KUON CHEN HARDWARE CO., LTD.
桃園縣龜山鄉頂湖一街24號
NO. 24, DINGHU 1ST ST, GUISHAN SHIANG, TAOYUAN COUNTY 333, TAIWAN (R. O. C.)

測試結果(Test Results)

測試部位(PART NAME)No.1 : 銅色金屬 (COPPER COLORED METAL)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	66
鉛 / Lead (Pb)	mg/kg		2	31000
汞 / Mercury (Hg)	mg/kg		2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	**	參考IEC 62321: 2008方法, 以沸水萃取法檢測. / With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative

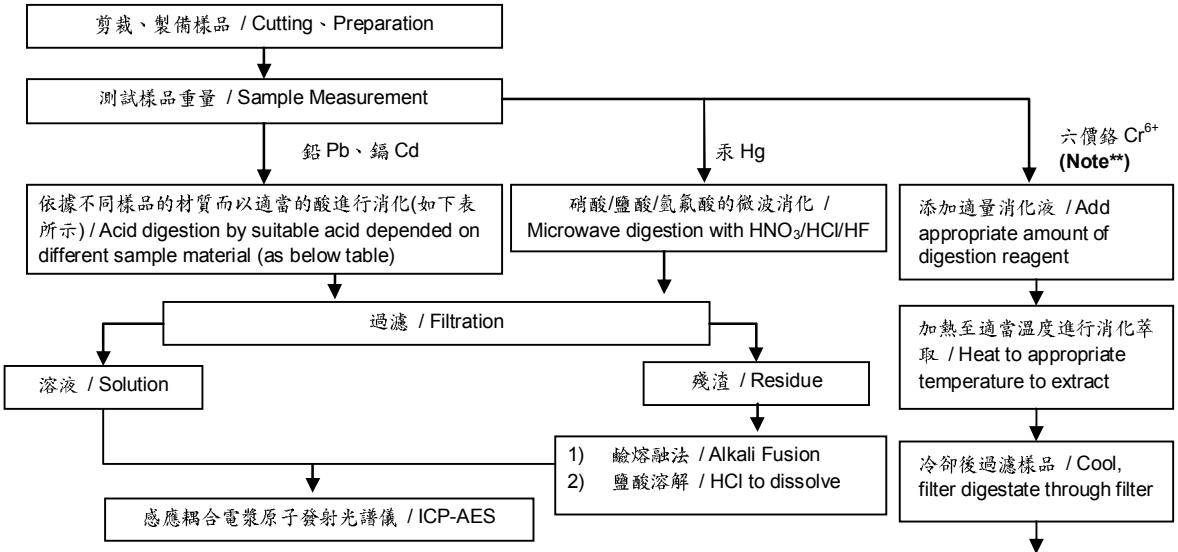
備註(Note):

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. **= Qualitative analysis (No Unit) 定性分析(無單位)
5. # = a. Positive means the presence of CrVI on the tested areas
   (Positive表示測試區域偵測到六價鉻)
   b. Negative means the absence of CrVI on the tested areas
   (Negative表示測試區域未偵測到六價鉻)
   The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm^2 tested areas. / 該溶液濃度≧0.02 mg/kg with 50 cm^2 (tested areas)

測試報告
Test Report

宮前五金股份有限公司
KUON CHEN HARDWARE CO., LTD.
桃園縣龜山鄉頂湖一街24號
NO. 24, DINGHU 1ST ST, GUISHAN SHIANG, TAOYUAN COUNTY 333, 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



樣品材質 / Sample Material	消化酸液種類 / Digestion Acid
鋼, 銅, 鋁, 焊錫 / Steel, copper, aluminum, solder	王水, 硝酸, 鹽酸, 氫氟酸, 雙氧水 / Aqua regia, HNO_3, HCl, HF, H_2O_2
玻璃 / Glass	硝酸,氫氟酸 / HNO_3/HF
金, 鉑, 鈀, 陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO_3
塑膠 / Plastic	硫酸, 雙氧水, 硝酸, 鹽酸 / H_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

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

測試報告
Test Report

宮前五金股份有限公司
KUON CHEN HARDWARE CO., LTD.
桃園縣龜山鄉頂湖一街24號
NO. 24, DINGHU 1ST ST, GUISHAN SHIANG, TAOYUAN COUNTY 333, TAIWAN (R. O. C.)

*** 照片中如有箭頭標示，則表示爲實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2013/14616

** 報告結尾 (End of Report) **

測試報告
Test Report

號碼(No.) : CE/2013/11384　　日期(Date) : 2013/01/14　　頁數(Page): 1 of 4

燁勝企業有限公司
SPECIAL MATERIAL ENT. CO., LTD.
新北市板橋區文化路二段367號10樓之11
10F-11, NO. 367, SEC. 2, WEN HUA ROAD, PANCHIAO DISTRICT, NEW TAIPEI CITY, 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)	:	FREE CUTTING BERYLLIUM COPPER BAR (快削鈹銅棒)
樣品型號(Style/Item No.)	:	C17300 (B33/25)
收件日期(Sample Receiving Date)	:	2013/01/07
測試期間(Testing Period)	:	2013/01/07 TO 2013/01/14

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測試需求(Test Requested)： 依據客戶要求，參考RoHS 2011/65/EU Annex II 指令進行鎘，鉛，汞，六價鉻測試.
(As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample.)

測試方法(Test Method)　： 參考IEC 62321: 2008方法 / With reference to IEC 62321: 2008.

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

Nicole Chien / Supervisor
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

測試報告
Test Report

號碼(No.) : CE/2013/11384　　日期(Date) : 2013/01/14　　頁數(Page): 2 of 4

燁勝企業有限公司
SPECIAL MATERIAL ENT. CO., LTD.
新北市板橋區文化路二段367號10樓之11
10F-11, NO. 367, SEC. 2, WEN HUA ROAD, PANCHIAO DISTRICT, NEW TAIPEI CITY, TAIWAN

測試結果(Test Results)

測試部位(PART NAME)No.1　：　銅色金屬棒 (COPPER COLORED METAL BAR)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg		2	2870
汞 / Mercury (Hg)	mg/kg		2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	**	參考IEC 62321: 2008方法, 以沸水萃取法檢測. / With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative

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. **= Qualitative analysis (No Unit) 定性分析(無單位)
5. # = a. Positive means the presence of CrVI on the tested areas
   (Positive表示測試區域偵測到六價鉻)
   b. Negative means the absence of CrVI on the tested areas
   (Negative表示測試區域未偵測到六價鉻)
   The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm^2 tested areas. / 該溶液濃度≧0.02 mg/kg with 50 cm^2 (tested areas)

測試報告
Test Report

號碼(No.) : CE/2013/11384　　日期(Date) : 2013/01/14　　頁數(Page): 3 of 4

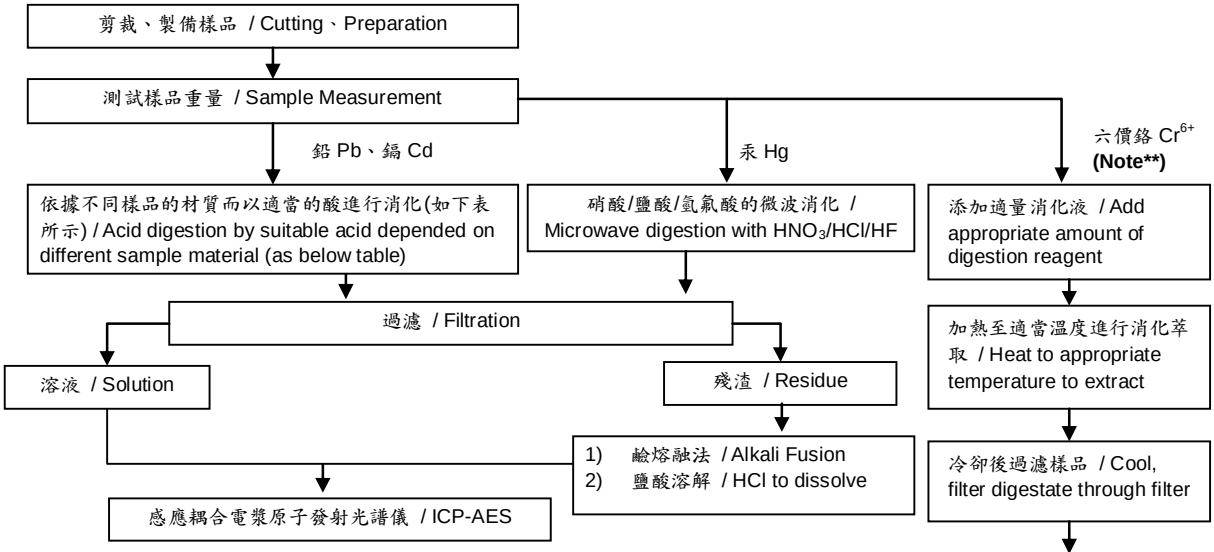
燁勝企業有限公司

SPECIAL MATERIAL ENT. CO., LTD.

新北市板橋區文化路二段367號10樓之11

10F-11, NO. 367, SEC. 2, WEN HUA ROAD, PANCHIAO DISTRICT, NEW TAIPEI CITY, TAIWAN

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



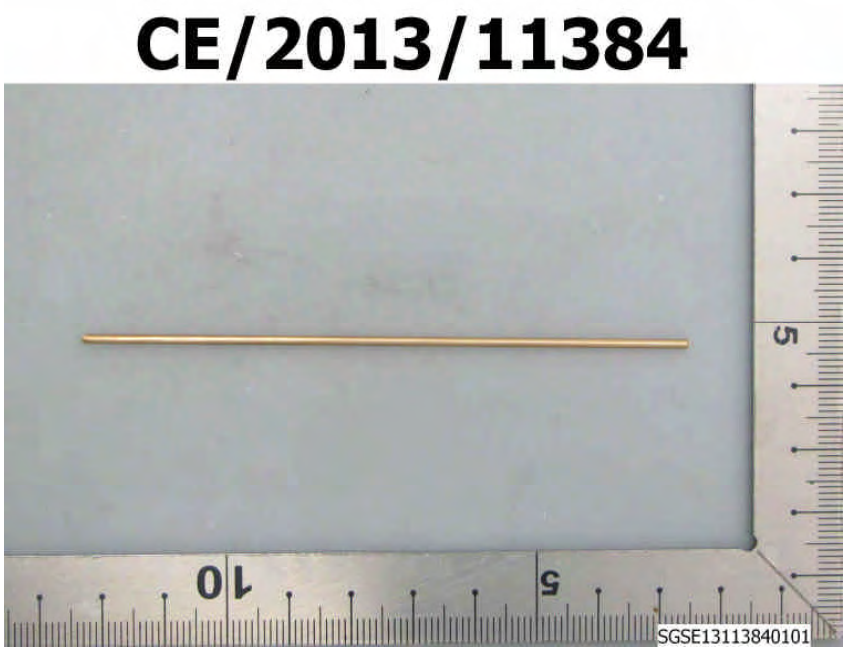
樣品材質 / Sample Material	消化酸液種類 / Digestion Acid
鋼，銅，鋁，焊錫 / Steel, copper, aluminum, solder	王水，硝酸，鹽酸，氫氟酸，雙氧水 / Aqua regia, HNO_3, HCl, HF, H_2O_2
玻璃 / Glass	硝酸,氫氟酸 / HNO_3/HF
金，鉑，鈀，陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO_3
塑膠 / Plastic	硫酸，雙氧水，硝酸，鹽酸 / H_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

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

測試報告
Test Report

燁勝企業有限公司
SPECIAL MATERIAL ENT. CO., LTD.
新北市板橋區文化路二段367號10樓之11
10F-11, NO. 367, SEC. 2, WEN HUA ROAD, PANCHIAO DISTRICT, NEW TAIPEI CITY, TAIWAN

*** 照片中如有箭頭標示，則表示爲實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)



** 報告結尾 (End of Report) **

測試報告
Test Report

號碼(No.) : CE/2013/23293　　日期(Date) : 2013/03/01　　頁數(Page): 1 of 6

宏庫貿易有限公司
GRAND WARE TRADING CO., LTD.
台北市大安區青田街8之1號1樓
1F., NO. 8-1, CHING TIEN ST., DA-AN AREA TAIPEI, TAIWAN R. O. C.

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

樣品名稱(Sample Description) : PTFE (鐵弗龍)
收件日期(Sample Receiving Date) : 2013/02/22
測試期間(Testing Period) : 2013/02/22 TO 2013/03/01

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測試需求(Test Requested) : 依據客户要求，參考RoHS 2011/65/EU Annex II 指令進行鎘，鉛，汞，六價鉻，多溴聯苯，多溴聯苯醚測試. (As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.)

測試方法(Test Method) : 參考IEC 62321: 2008方法 / With reference to IEC 62321: 2008.

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

結論(Conclusion) : 根據客户所提供的樣品，其鎘，鉛，汞，六價鉻，多溴聯苯,多溴聯苯醚的測試結果符合RoHS指令2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on submitted samples, the test result(s) of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)

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

測試報告
Test Report

宏庫貿易有限公司
GRAND WARE TRADING CO., LTD.
台北市大安區青田街8之1號1樓
1F., NO. 8-1, CHING TIEN ST., DA-AN AREA TAIPEI, TAIWAN R. O. C.

測試結果(Test Results)

測試部位(PART NAME)No.1 : 白色鐵氟龍 (WHITE TEFLON)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1	法規限值 (Limit)
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	100
鉛 / Lead (Pb)	mg/kg		2	n.d.	1000
汞 / Mercury (Hg)	mg/kg		2	n.d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321: 2008方法, 以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.	1000
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.	1000
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n.d.	-
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n.d.	-
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.	-
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n.d.	-
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n.d.	-
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n.d.	-
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.	-
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.	-
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n.d.	-
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n.d.	-

測試報告
Test Report

宏庫貿易有限公司
GRAND WARE TRADING CO., LTD.
台北市大安區青田街8之1號1樓
1F., NO. 8-1, CHING TIEN ST., DA-AN AREA TAIPEI, TAIWAN R. O. C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1	法規限值 (Limit)
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	參考IEC 62321: 2008方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.	1000
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg		5	n.d.	-
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n.d.	-
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.	-
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n.d.	-
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.	-
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.	-
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.	-
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n.d.	-
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg		5	n.d.	-
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg		5	n.d.	-

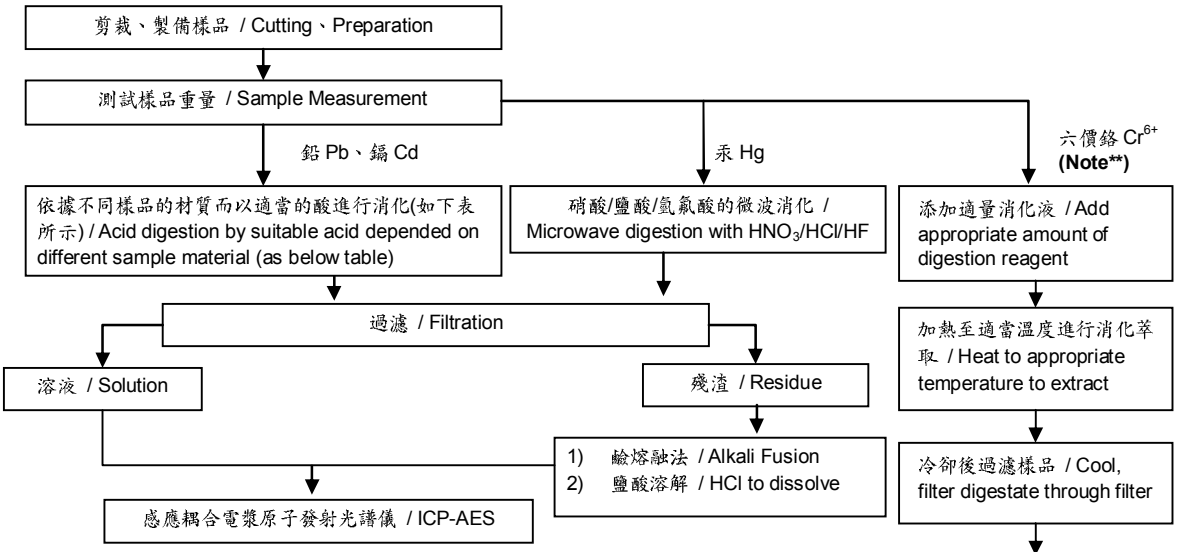
備註(Note):

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)

測試報告
Test Report

宏庫貿易有限公司
GRAND WARE TRADING CO., LTD.
台北市大安區青田街8之1號1樓
1F., NO. 8-1, CHING TIEN ST., DA-AN AREA 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



樣品材質 / Sample Material	消化酸液種類 / Digestion Acid
鋼, 銅, 鋁, 焊錫 / Steel, copper, aluminum, solder	王水, 硝酸, 鹽酸, 氫氟酸, 雙氧水 / Aqua regia, HNO_3, HCl, HF, H_2O_2
玻璃 / Glass	硝酸,氫氟酸 / HNO_3/HF
金, 鉑, 鈀, 陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO_3
塑膠 / Plastic	硫酸, 雙氧水, 硝酸, 鹽酸 / H_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

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

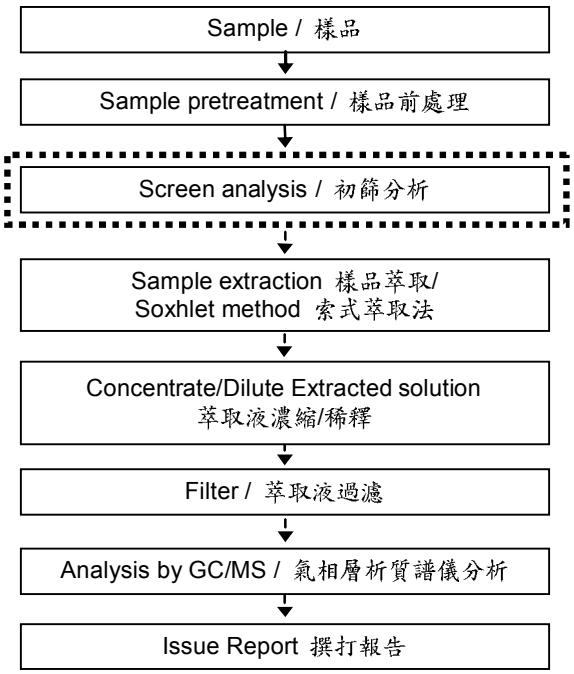
測試報告
Test Report

宏庫貿易有限公司
GRAND WARE TRADING CO., LTD.
台北市大安區青田街8之1號1樓
1F., NO. 8-1, CHING TIEN ST., DA-AN AREA TAIPEI, TAIWAN R. O. C.

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

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

初次測試程序 / First testing process ——→
選擇性篩檢程序 / Optional screen process ▪▪▪▪▪▪▪▪▪
確認程序 / Confirmation process — · — ·▸

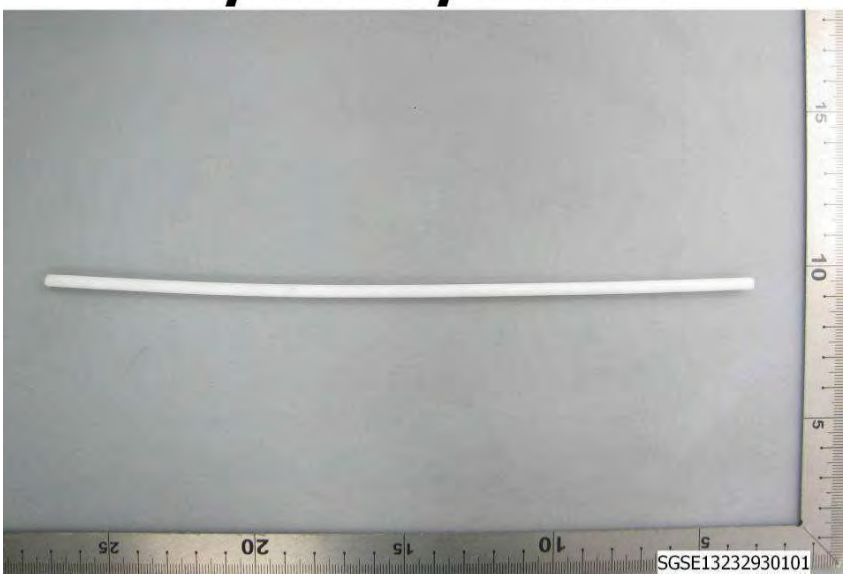


測試報告
Test Report

宏庫貿易有限公司
GRAND WARE TRADING CO., LTD.
台北市大安區青田街8之1號1樓
1F., NO. 8-1, CHING TIEN ST., DA-AN AREA TAIPEI, TAIWAN R. O. C.

*** 照片中如有箭頭標示，則表示爲實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2013/23293



** 報告結尾 (End of Report) **

測試報告

聯達電子工業股份有限公司
TAIWAN LEADER ADVANCED TECHNOLOGY CORPORATION
桃園縣平鎮市工業五路10號
NO. 10, INDUSTRIAL 5TH RD., PINGCHENG CITY, TAOYUAN COUNTY, TAIWAN, R. O. C.

號碼 : CE/2007/41379A
日期 : 2007/04/30
頁數 : 1 of 16

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

樣品名稱(Sample Description)	:	基板
樣品型號(Style/Item No.)	:	FR4 LS-4Y/JL-THY/JL-PPY
收件日期(Sample Receiving Date)	:	2007/04/09
測試期間(Testing Period)	:	2007/04/09 TO 2007/04/14

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測試結果 : 請見下一頁.

Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

測試報告

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號碼 : CE/2007/41379A
日期 : 2007/04/30
頁數 : 2 of 16

測試結果

測試部位 NO.1 : 黃色基板 / YELLOW LAMINATE

測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321, Ed. 1 111/54/CDV 方法, 用感應藕合電漿原子發射光譜儀 (ICP-AES) 檢測鎘含量. / With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Cadmium by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321, Ed. 1 111/54/CDV 方法, 用感應藕合電漿原子發射光譜儀 (ICP-AES) 檢測鉛含量. / With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Lead by ICP-AES.	2	n.d.
汞 / Mercury (Hg)	mg/kg	參考IEC 62321, Ed. 1 111/54/CDV 方法, 用感應藕合電漿原子發射光譜儀 (ICP-AES) 檢測汞含量. / With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Mercury by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	針對非金屬材質之樣品, 參考IEC 62321, Ed. 1 111/54/CDV 方法檢測, 用UV-VIS檢測六價鉻含量. / With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.	2	n.d.
銻 / Antimony (Sb)	mg/kg	參考US EPA 3050B 方法, 用感應耦合電漿原子發射光譜儀檢測銻含量 / With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	2	4210

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
鉻 / Chromium (Cr)	mg/kg	參考US EPA 3050B 方法, 用感應耦合電漿原子發射光譜儀檢測鉻含量 / With reference to US EPA Method 3050B for Chromium Content. Analysis was performed by ICP-AES.	2	44
四溴雙酚-A / Tetrabromobisphenol A (TBBP-A) (CAS NO.: 000079-94-7)	mg/kg	參考DIN 53313方法, 以氣相層析儀/質譜儀檢測. / With reference to DIN 53313. Analysis was performed by GC/MS.	10	n.d.
鹵素 / HALOGEN	---	參考prEN14582方法B, 以離子層析儀分析氟, 氯, 溴, 碘含量 / With reference to prEN14582 method B. Analysis was performed by IC method for F , Cl , Br, I	---	---
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS NO.: 007782-50-5)	mg/kg	參考prEN14582方法B, 以離子層析儀分析氯含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Chlorine content.	50	n.d.
鹵素 (氟) / Halogen-Fluorine (F) (CAS NO.: 007782-41-4)	mg/kg	參考prEN14582方法B, 以離子層析儀分析氟含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Fluorine content.	50	n.d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS NO.: 007726-95-6)	mg/kg	參考prEN14582方法B, 以離子層析儀分析溴含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Bromine content.	50	58700
鹵素 (碘) / Halogen-Iodine (I) (CAS NO.: 007553-56-2)	mg/kg	參考prEN14582方法B, 以離子層析儀分析碘含量 / With reference to prEN14582 method B. Analysis was performed by IC method for Iodine content.	50	n.d.

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號碼 : CE/2007/41379A
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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321, Ed. 1 111/54/CDV 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, Ed.1 111/54/CDV. Determination of PBB and PBDE by GC/MS.	-	n.d.
一溴聯苯 / Monobromobiphenyl			5	n.d.
二溴聯苯 / Dibromobiphenyl			5	n.d.
三溴聯苯 / Tribromobiphenyl			5	n.d.
四溴聯苯 / Tetrabromobiphenyl			5	n.d.
五溴聯苯 / Pentabromobiphenyl			5	n.d.
六溴聯苯 / Hexabromobiphenyl			5	n.d.
七溴聯苯 / Heptabromobiphenyl			5	n.d.
八溴聯苯 / Octabromobiphenyl			5	n.d.
九溴聯苯 / Nonabromobiphenyl			5	n.d.
十溴聯苯 / Decabromobiphenyl			5	n.d.
多溴聯苯醚總和 (一至九溴) / Sum of PBDEs (Mono to Nona) (Note 4)			-	n.d.
一溴聯苯醚 / Monobromobiphenyl ether			5	n.d.
二溴聯苯醚 / Dibromobiphenyl ether			5	n.d.
三溴聯苯醚 / Tribromobiphenyl ether			5	n.d.
四溴聯苯醚 / Tetrabromobiphenyl ether			5	n.d.
五溴聯苯醚 / Pentabromobiphenyl ether			5	n.d.
六溴聯苯醚 / Hexabromobiphenyl ether			5	n.d.
七溴聯苯醚 / Heptabromobiphenyl ether			5	n.d.
八溴聯苯醚 / Octabromobiphenyl ether			5	n.d.
九溴聯苯醚 / Nonabromobiphenyl ether			5	n.d.
十溴聯苯醚 / Decabromobiphenyl ether			5	n.d.
多溴聯苯醚總和 (一至十溴) / Sum of PBDEs (Mono to Deca)			-	n.d.
海龍 (Halons)	---	---	---	---
Halon-1211 (CAS NO.: 000353-59-3)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Halon-1301 (CAS NO.: 000075-63-8)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.

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Halon-2402 (CAS NO.: 000124-73-1)	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
臭氧危氧物ODCs定量分析 / CFC's (Chlorofluorocarbons)	---	---	---	---
Group I	---	---	---	---
Chlorofluorocarbon-11 (CAS NO.: 000075-69-4)	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-12 (CAS NO.: 000075-71-8)	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-113 (CAS NO.: 000076-13-1)	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-114 (CAS NO.: 000076-14-2)	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-115 (CAS NO.: 000076-15-3)	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Group III	---	---	---	---
Chlorofluorocarbon-13 (CAS NO.: 000075-72-9)	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-111 (CAS NO.: 000354-56-3)	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
Chlorofluorocarbon-112 (CAS NO.: 000076-12-0)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-211 (CAS NO.: 135401-87-5)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-212 (CAS NO.: 076564-99-3)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-213 (CAS NO.: 060285-54-3)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-214 (CAS NO.: 002268-46-4)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-215 (CAS NO.: 000076-17-5)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-216 (CAS NO.: 001652-80-8)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-217 (CAS NO.: 000422-86-6)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
臭氧危氧物ODCs (HCFCs)定量分析 / HCFC's (Hydrogenated chlorofluorocarbons)	---	---	---	---
Hydrochlorofluorocarbon-21 (CAS NO.: 000075-43-4)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-22 (CAS NO.: 000075-45-6)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-31 (CAS NO.: 000593-70-4)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-121 (CAS NO.: 000354-14-3)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-122 (CAS NO.: 000354-21-2)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-123 (CAS NO.: 000306-83-1)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-124 (CAS NO.: 002837-89-0)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-131 (CAS NO.: 000359-28-4)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
Hydrochlorofluorocarbon-131b (CAS NO.: 000471-43-2)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-133a (CAS NO.: 000075-88-7)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-141b (CAS NO.: 001717-00-6)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-221	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-222 (CAS NO.: 000422-30-0)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-223	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-224	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-225ca (CAS NO.: 000422-56-0)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
Hydrochlorofluorocarbon-225cb (CAS NO.: 000507-55-1)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-226 (CAS NO.: 000431-87-8)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-231	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-232	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-233	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-234	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-235 (CAS NO.: 013838-16-9)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-241	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
Hydrochlorofluorocarbon-242	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-243 (CAS NO.: 000338-75-0)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-244	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-251	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-252	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-253 (CAS NO.: 000354-06-1)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-261 (CAS NO.: 000420-97-3)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
Hydrochlorofluorocarbon-262 (CAS NO.: 000420-99-5)	mg/kg	參考 US EPA 5021方法, 以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.

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NO. 10, INDUSTRIAL 5TH RD., PINGCHENG CITY, TAOYUAN COUNTY, TAIWAN, R. O. C.

測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
Hydrochlorofluorocarbon-271	mg/kg	參考 US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021. Analysis was performed by GC/MS.	1	n.d.
有機錫 / Organic-tin coumpounds	---	---	---	---
三苯基錫 / Triphenyl Tin (TphT) (CAS NO.: 000668-34-8)	mg/kg	本測試參考DIN 38407-13方法，以氣相層析儀/火焰光度偵測器檢測. / With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.
三丁基錫 / Tributyl Tin (TBT) (CAS NO.: 000688-73-3)	mg/kg	本測試參考DIN 38407-13方法，以氣相層析儀/火焰光度偵測器檢測. / With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.
石棉 / Asbestos	---	---	---	---
棕石棉 / Amosite (CAS NO.: 012172-73-5)	%	參考NIOSH 9000 / X光繞射定性分析法 (XRD) / As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
白石棉 / Chrysotile (CAS NO.: 012001-29-5)	%	參考NIOSH 9000 / X光繞射定性分析法 (XRD) / As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
青石棉 / Crocidolite (CAS NO.: 012001-28-4)	%	參考NIOSH 9000 / X光繞射定性分析法 (XRD) / As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
斜方角閃石 / Anthophyllite (CAS NO.: 017068-78-9)	%	參考NIOSH 9000 / X光繞射定性分析法 (XRD) / As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative

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號碼 : CE/2007/41379A
日期 : 2007/04/30
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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
透閃石 / Tremolite (CAS NO.: 014567-73-8)	%	參考NIOSH 9000 / X光繞射定性分析法 (XRD) / As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
陽起石 / Actinolite (CAS NO.: 013768-00-8)	%	參考NIOSH 9000 / X光繞射定性分析法 (XRD) / As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
偶氮 (AZO)	---	---	---	---
1): 4-氨基二苯 / 4-AMINODIPHENYL (CAS NO.: 000092-67-1)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
2): 聯苯胺 / BENZIDINE (CAS NO.: 00092-87-5)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
3): 4-氯鄰甲苯胺 / 4-CHLORO-O-TOLUIDINE (CAS NO.: 000095-69-2)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
4): 2-萘胺 / 2-NAPHTHYLAMINE (CAS NO.: 000091-59-8)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
5): 鄰氨基二甲基偶氮 / O-AMINOAZOTOLUENE (CAS NO.: 000097-56-3)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
6): 對硝基鄰甲苯胺 / 2-AMINO-4-NITROTOLUENE (CAS NO.: 000099-55-8)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
7): 對氯苯胺 / P-CHLOROANILINE (CAS NO.: 000106-47-8)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
19): 2,4-二氨基甲苯 / 2,4-TOLUYLENEDIAMINE (CAS NO.: 000095-80-7)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
8): 4-甲氧基-間苯二胺 / 2,4-DIAMINOANISOLE (CAS NO.: 000615-05-4)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
9): 4,4'-二氨基二苯甲烷 / 4,4'-DIAMINODIPHENYLMETHANE (CAS NO.: 000101-77-9)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
10): 3,3'-二氯聯苯胺 / 3,3'-DICHLOROBENZIDINE (CAS NO.: 000091-94-1)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
11): 3,3'-二甲氧基聯苯胺 / 3,3'-DIMETHOXYBENZIDINE (CAS NO.: 000119-90-4)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
12): 3,3'-二甲基聯苯胺 / 3,3'-DIMETHYLBENZIDINE (CAS NO.: 000119-93-7)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
13): 3,3'-二甲基-4,4'-二氨基二苯甲烷 / 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS NO.: 000838-88-0)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
14): 2-甲氧基-5-甲基聯苯 / P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS NO.: 000120-71-8)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
15): 4,4'-亞甲基雙 (氯苯胺) / 4,4'-METHYLENE-BIS- (2-CHLOROANILINE) (CAS NO.: 000101-14-4)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
16): 4,4'-氧化雙苯胺 / 4,4'-OXYDIANILINE (CAS NO.: 000101-80-4)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
17): 4,4'-硫代雙苯胺 / 4,4'-THIODIANILINE (CAS NO.: 000139-65-1)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
18): 鄰甲苯胺 / O-TOLUIDINE (CAS NO.: 000095-53-4)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
19): 2,4-二氨基甲苯 / 2,4-TOLUYLENEDIAMINE (CAS NO.: 000095-80-7)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
20): 2,4,5-三甲基苯胺 / 2,4,5-TRIMETHYLANILINE (CAS NO.: 000137-17-7)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
21): 鄰位甲氧基苯胺 / O-ANISIDINE (CAS NO.: 000090-04-0)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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測試項目 (Test Item)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
22): 對氨基偶氮苯 / P-AMINOAZOBENZENE (CAS NO.: 000060-09-3)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
23): 2,4-二甲基苯胺 (CAS NO.: 000095-68-1) / 4-AMINO-3-FLUOROPHENOL (CAS NO.: 87-62-7)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
24): 對氨基偶氮苯 / P-AMINOAZOBENZENE (CAS NO.: 000060-09-3)	mg/kg	本測試參考LMBG 82.02-2方法，以氣相層析質譜儀檢測 / With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.

Note： 1. mg/kg = ppm
2. n.d. = Not Detected / 未檢出
3. MDL = Method Detection Limit / 方法偵測極限值
4. According to 2005/717/EC DecaBDE is exempt.
根據2005年10月13日歐盟會議公佈2005/717/EC，修訂2002/95/EC內容，通過解除高分子材質中十溴聯苯醚之使用限制。
5. "-" = Not Regulated / 無規格值
6. "---" = Not Conducted / 未測項目

測試報告

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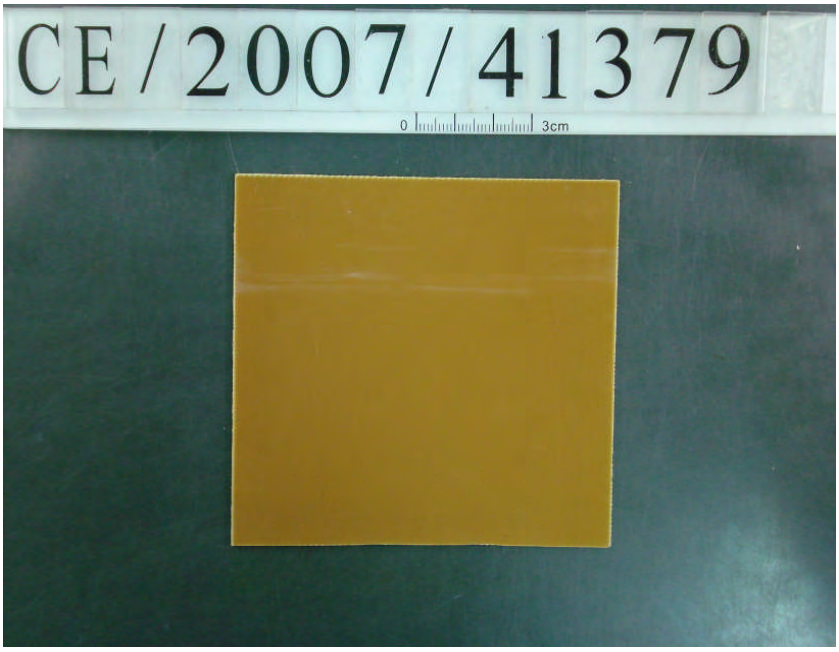

** 報告結尾 **

Test Report Number : TWNC00147323

Applicant: Shin-Etsu Silicone Taiwan Co., Ltd.
25, Kuang Fu. S. Rd.,
Hsin-Chu Ind. Park,
Hsin Chu Taiwan ROC

Date : Feb 02, 2010

Sample Description:
One (1) group/piece of submitted samples said to be :

Type Of Product	:	Silicone Rubber
Style/Item No.	:	KE-900 系列:KE-931TU, KE-941U, KE-944U, KE-951U, KE-971TU(001794, 001162, 907514, 001172, 001828)
Date Sample Received	:	Jan 27, 2010 / Jan 15, 2010
Date Test Started	:	Jan 27, 2010 / Jan 18, 2010

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

Conclusion:

Tested Sample	Standard	Result
Submitted Samples	Restriction Of Hazardous Substances (RoHS) Test - As per applicant's request with reference to 2002/95/EC and amendment 2005/618/EC	Pass(#1)
	Halogen Content - As Per Applicant's Request	See Test Conducted (#2)

Remarks: #1 = Results were transferred from report NO. TWNC00146670 dated Jan 27, 2010.
#2 = Results were transferred from report NO. TWNC00145556 dated Jan 21, 2010.

Authorized By:
On Behalf Of Intertek Testing Services Taiwan Limited

K. Y. Liang
Director

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Test Report Number : TWNC00147323

Authorized By:
On Behalf Of Intertek Testing Services
Taiwan Limited

K. Y. Liang
Director

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Number: TWNC00147323

Test Conducted

(I) Test Result Summary:

Testing Item	Result (%)	Limit(%)
	White Silicone Rubber	
Heavy Metal		
Cadmium (Cd) Content	ND	0.01
Lead (Pb) Content	ND	0.1
Mercury (Hg) Content	ND	0.1
Chromium VI (Cr^{6+}) Content	ND	0.1
Polybrominated Biphenyls (PBBs)		
Monobrominated Biphenyls (MonoBB)	ND	--
Dibrominated Biphenyls (DiBB)	ND	--
Tribrominated Biphenyls (TriBB)	ND	--
Tetrabrominated Biphenyls (TetraBB)	ND	--
Pentabrominated Biphenyls (PentaBB)	ND	--
Hexabrominated Biphenyls (HexaBB)	ND	--
Heptabrominated Biphenyls (HeptaBB)	ND	--
Octabrominated Biphenyls (OctaBB)	ND	--
Nonabrominated Biphenyls (NonaBB)	ND	--
Decabrominated Biphenyl (DecaBB)	ND	--
Sum Of PBBs	ND	0.1
Polybrominated Diphenyl Ethers (PBDEs)		
Monobrominated Diphenyl Ethers (MonoBDE)	ND	--
Dibrominated Diphenyl Ethers (DiBDE)	ND	--
Tribrominated Diphenyl Ethers (TriBDE)	ND	--
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND	--
Pentabrominated Diphenyl Ethers (PentaBDE)	ND	--
Hexabrominated Diphenyl Ethers (HexaBDE)	ND	--
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND	--
Octabrominated Diphenyl Ethers (OctaBDE)	ND	--
Nonabrominated Diphenyl Ethers (NonaBDE)	ND	--
Decabrominated Diphenyl Ether (DecaBDE)	ND	--
Sum Of PBDEs	ND	0.1
Halogen Content		
Fluorine (F)	ND	--
Chlorine (Cl)	ND	--
Bromine (Br)	ND	--
Iodine (I)	ND	--

Remarks : % = Percentage based on weight of tested sample
ND = Not detected
According to directive 2005/618/EC, the limit is defined per homogeneous material in weight percentage.

Responsibility Of Chemist: Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received : Jan 15, 2010
Testing Period : Jan 18, 2010 To Feb 01, 2010

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Test Conducted

(Ⅱ) Test Method:

Testing Item	Testing Method	Reporting Limit
Lead (Pb) Content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	0.0002%
Cadmium (Cd) Content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	0.0002%
Mercury (Hg) Content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	0.0002%
Chromium VI (Cr^{6+}) Content	With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.	0.0001%
Polybrominated Biphenyls (PBBs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	0.0005%
Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	0.0005%
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	0.005%

Remark: Reporting limit = Quantitation limit of analyte in sample

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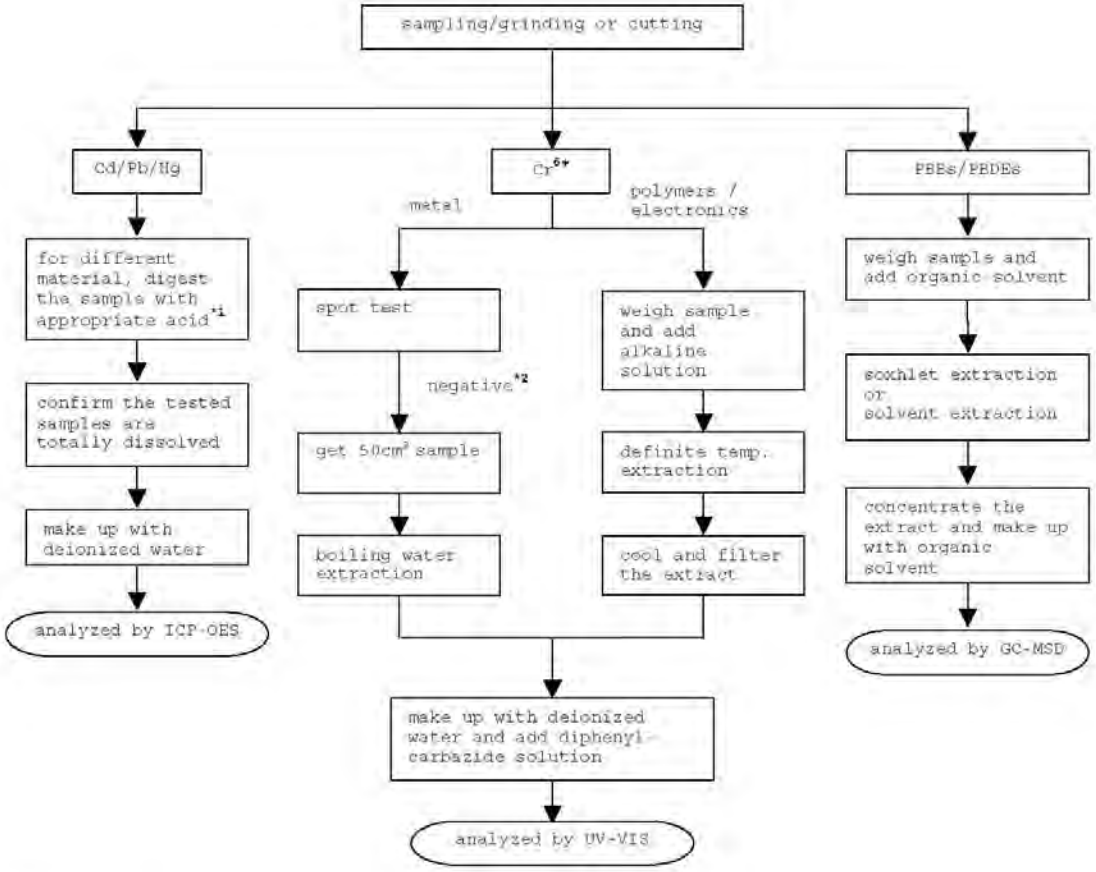
Test Conducted

(Ⅲ) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents
Reference Standard: IEC 62321 edition 1.0:2008



Remarks:

*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO_3, HCl, HF, H_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

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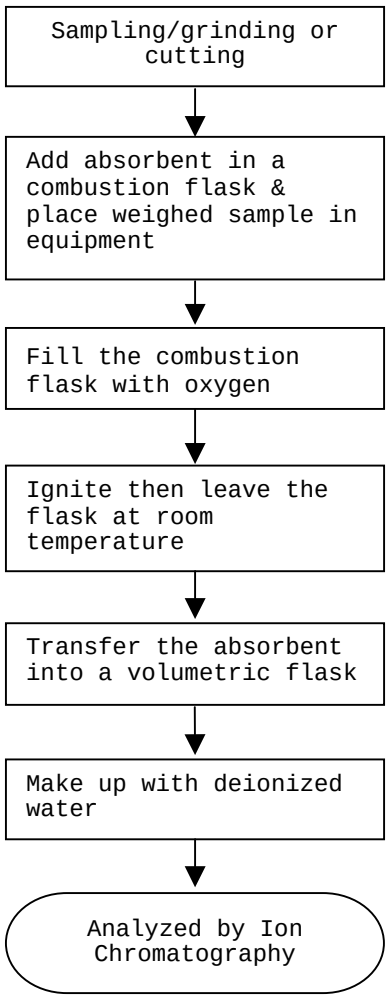
Test Conducted

(Ⅲ) Measurement Flowchart:

Test For Halogen Content
Reference Method: EN 14582:2007



End Of Report

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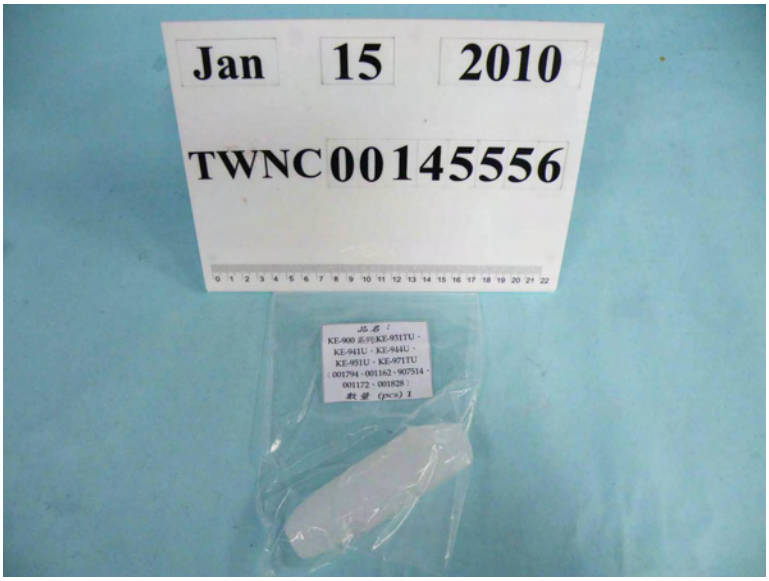
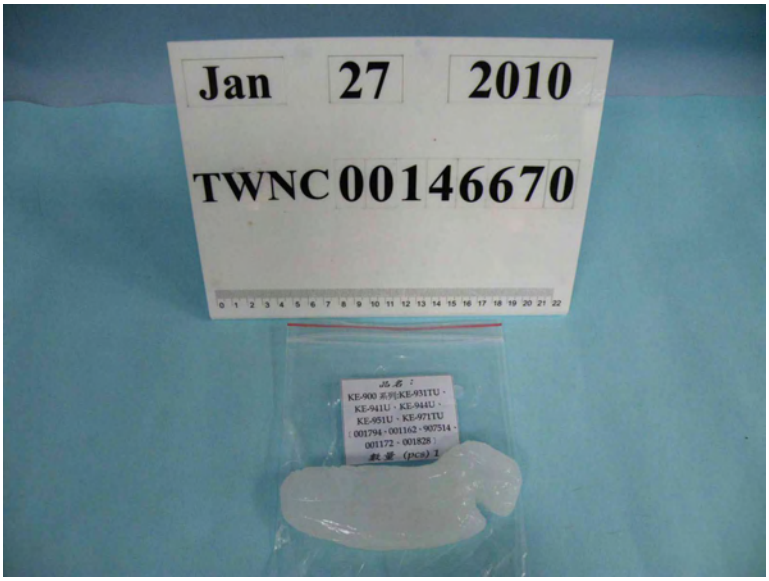
Number: TWNC00147323

Test Conducted

Photo





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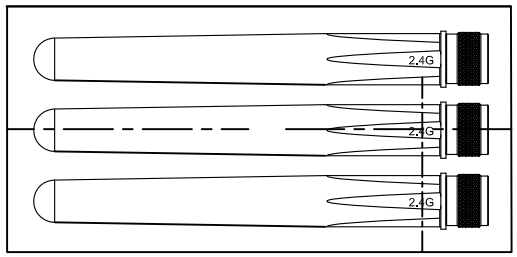
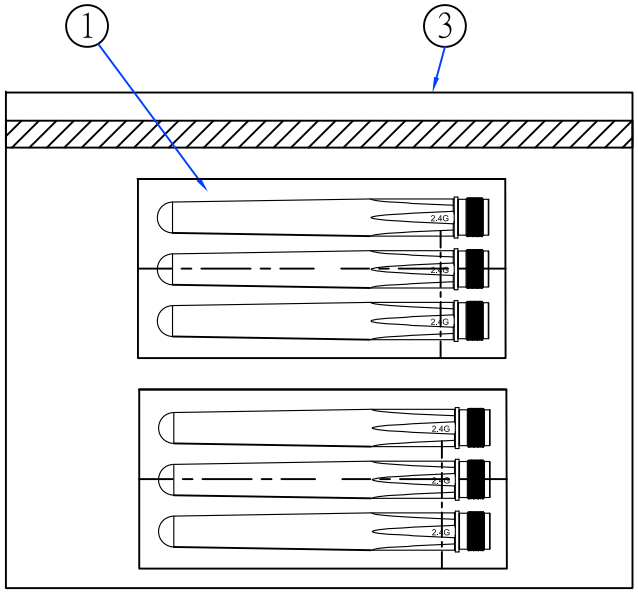
包裝示意圖

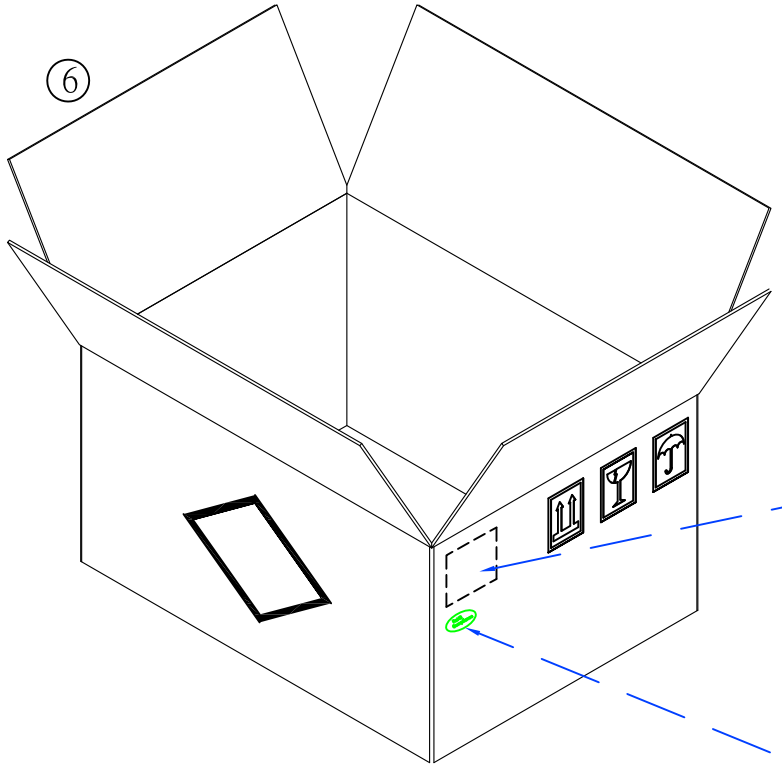
②



1. 每 set 為 "2.4G 天線 3 pcs 裝 1 小袋"



2. 每大袋裝 30 set



3. 每箱裝 2 大袋 , 共 60 set

④

Carton Label Size:
100.0 (L) x 100.0 (W) mm

供應廠商: 榮昌科技　客戶名稱: 瑞訊

訂單號:

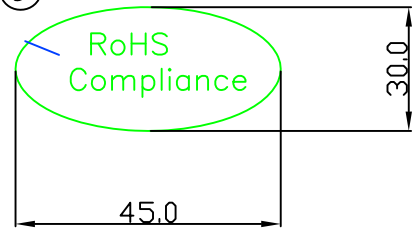
料號: 3009-00000134-01Z

品名規格: DIPOLE ANT / 白 (榮昌)

單位包裝: 1 set　　總數量: 60 set

交貨日期: YY/MM/DD

⑤



RoHS

ITEM	Q'TY	U/M	PART NO.	DESCRIPTION
6	1	EA	BLHM-CTN-10-1	Carton 450x350x250
5	1	EA	PLABROHS	RoHS LOGO LABEL(綠底白字)
4	2	EA	L-100x100-ART-W	銅版紙W100xL100mm白色　1000pcs/Roll
3	2	EA	PE BAG 33x46CM	PE袋 33X46CM
2	60	EA	PE BAG 18x24CM	PE袋 18x24CM
1	180	EA	OS-ISM24-05-C0	OMNI-DIRECTIONA ANTENNA FOR 2.4~2.5GHz

UNLESS OTHERWISE SPECIFIED
TOLERANCE :
ANGLES : ±2°
X.X ±0.3
X.XX ±0.15
DO NOT SCALE DRAWING

DRAWN BY: Tom
CHECKED BY: Jesse
APPROVED BY: Minghu
DWG NO.

榮昌科技股份有限公司
GRAND-TEK TECHNOLOGY CO., LTD.

TITLE: OMNI-DIRECTIONA ANTENNA FOR 2.4~2.5GHz
G0086

SIZE A | UNIT mm | SCALE

PART NO. 3009-00000134-01Z
REV. B

THIRD ANGLE PROJECTION

PAGE 2 OF 2

ITEM NO. OA-24-04-01-WI-EDS11
DATE 2014/10/1