承 認 書

FOR APPROVAL

CUSTOMER	:	
CUSTOMER P/N	:	
DESCRIPTION	:	6POSITION, SIDE ENTRY, VERY LOW PROFILE, PCB JACK
PART NO	:	9694-6615-C
ISSUED BY	:	*Joey Ho*

CONCLUSION	REMARK
☐ APPROVED ☐ REJECTED ☐ LIMITED DATE:_____	*RoHS Compliant*

Sunny Young Enterprise Co.,Ltd.
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Modular Jacks

1. SCOPE

1.1. CONTENT

This specification covers performance, tests and quality requirements for Modular Jack Connector.

1.2. QUALIFICATION

When tests are performed on the subject product line, all inspections shall be performed using the applicable inspection plan and product drawing..

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. In the Event of conflict between the requirements of this specification and the product drawing, the Product drawing shall take precedence. In the event of conflict between the requirements of this Specification and the referenced documents, this specification shall take precedence.

2.1 SPECIFICATIONS

Documents

A. PS-2000 Test specifications as indicated in Figure 1.

B. TR-2000 Test report.

Federal

A. QQ-B-626 Brass; bar, plate, rod, strip, flat wire and special shaped sections

B. QQ-B-750 Bronze, phosphor; bar, plate, rod, sheet, strip, flat, wire, and structural and Special shaped sections

C. QQ-N-290 Plating, nickel (electrodeposited)

Military

A. MIL-STD-1344A Test methods for electrical connectors

B. MIL-C-39012C General specification for connectors, coaxial, radio frequency

C. MIL-G-45204 Gold plating (electrodeposited)

Underwriters'Laboratories, Inc.

A. UL- STD -94 Tests for flammability of plastic material for parts in devices and appliances.

Others

A. ISO 2859 Sampling procedures for inspection by attributes.

B. FCC Rules for Registration of Telephone Equipment Part 68, Subpart F, connectors.

C. EIA-364 : Electrical Connector/Socket Test Procedures Including Environmental Classifications.

D. JESD22-B102D: Solderability Test Method.

3. REQUIREMENTS

3.1 DESIGN AND CONSTRUCTION

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2 MATERIALS

A. Contact : Phosphor Bronze
Contact area Gold plating
Solder tails Gold (or Tin) plating, Nickel under plated all over.

B. Housing: High temp. Thermoplastic, UL94V-0, Black.

3.3 RATINGS

A. Relative Humidity: 70%±10%RH

B. Operating Temperature: -40°C to 85°C

C. Current Rating: 1.5A Max

D. Voltage Rating: 150 VAC Max.

3.4 PERFORMANCE AND TEST DESCRIPTION

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1.

3.5 TEST REQUIREMENTS AND PROCEDURES SUMMARY

NO.	TEST DESCRIPTION	REQUIREMENT
1	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetics Specs and Drawing.
		ELECTRICAL
2	Contact Resistance.	Open circuit at 20mV Max, 100mA Max. Requirement : 20mΩ max initial. 30mΩ max final. EIA-364-23B (Figure 3)
3	Dielectric Withstanding Voltage.	Test between adjacent circuits of unmated connector. 1KVrms at 60Hz , 1 minute between adjacent contacts. 1.5KVrms at 60Hz , 1 minute between shield and contacts. Requirement: No creeping discharge or flashover shall occur. Current leakage: 0.5 mA Max. EIA-364-20B
4	Insulation Resistance	Test between adjacent contacts of unmated connector for 1 minute. Impressed voltage 500 VDC. Requirement: 500 MΩ Min. Initial. 200 MΩ Min. Final. EIA-364-21C.

Figure 1 (Continue)

		MECHANICAL
5	Contact Normal Force	Individually pin of contact area Requirement: 0.1kgf Min. EIA-364-04A (Figure 4)
6	Durability	Mate and unmated for 750 cycles Operation Speed: 25mm/min. Requirement: Note 1 EIA-364-09C
7	Mating Force	Measure the force required to mate connector. Operation speed: 25 mm/min. Requirement: 2 contacts -----1.6Kgf Max. 4 contacts -----1.8Kgf Max. 6 contacts -----2.1Kgf Max. 8 contacts -----2.3Kgf Max. 10 contacts -----2.5Kgf Max. EIA-364-13B
		ENVIRONMENTAL
8	Humidity test	At a temperature of 40℃±2℃ and relative humidity of 90% to 95% for 96 hours. Requirement: Note 1 EIA-364-31B
9	Temperature Life	Exposing in a heat chamber at a temperature of 65℃±2℃ for 96 hours. Requirement: Note 1 EIA-364-17B
10	Salt Spray	Subject mated connectors to 35±2 ℃ and 5+/-1% salt condition for 48hours. After test, rinse the sample with water and recondition the room temperature for 1 hour. Requirement: No detrimental corrosion allowed in contact area and base metal exposed. EIA-364-26B
11	Solderability	Solder pot temperature: 245±5℃ Solder immersion time: 5±0.5sec. Requirement: The inspected area of each lead must have 95% solder coverage minimum. JESD22-B102D

Figure 1（End）

Note 1：Shall meet visual requirements, show no physical damage, and meet requirement of additional tests as specified in the test sequence in Figure 2

3.6 CONNECTOR TESTS AND SEQUENCES

Items	Test Group				
	A	B	C	D	E
1 Visual&Mechanical Examination	1 , 7	1 , 5	1 , 7	1 , 7	1 , 4
2 Contact Resistance.	2 , 6	2 , 4	2 , 6	2, 6	
3 Dielectric Withstanding Voltage.			3 , 5		
4 Insulation Resistance				3 , 5	
5 Contact Normal Force					2
6 Durability	4				
7 Mating Force	3 , 5				
8 Humidity test		3			
9 Temperature Life			4		
10 Salt Spray				4	
11 Solderability					3

Figure 2

3.7 TEST SAMPLES

The test samples consisted of 25 pcs which were divided into 5 groups (A,B,C,D and E) with 5 pcs In each group for each corresponding test group defined in section 3.6 CONNECTOR TESTS AND SEQUENCES.

4. QUALITY ASSURANCE PROVISIONS

4.1 SAMPLE SELECTION

Modular jack test samples shall be selected at random from current production lots. They shall be prepared for testing in accordance with current application specifications and instruction sheets.

4.2 ACCEPTANCE

Acceptance is based on verification that the product meets the requirements of figure 1. Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.3 QUALITY CONFORMANCE INSPECTION

The applicable SJC quality inspection plan will specify the sampling quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.

Figure 3. Low Level Contact Resistance :

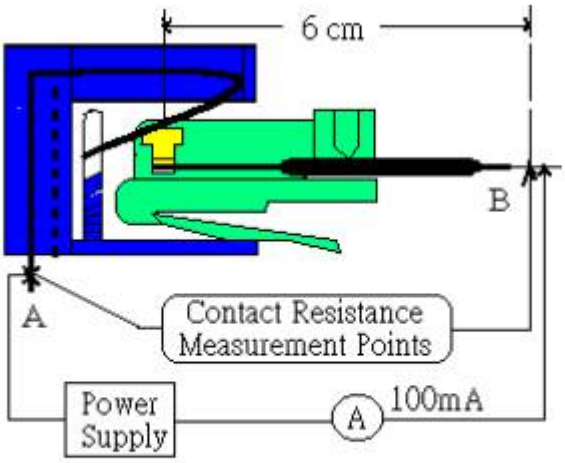
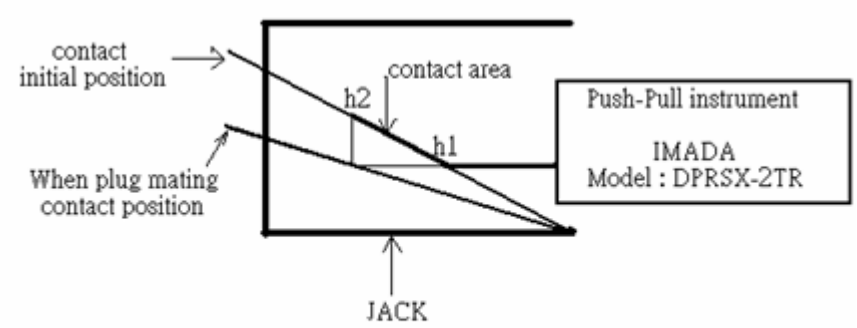


Figure: Contact Resistance Test.

Note: Resistance of 6 cm wire length and contact pin shall be subtracted from all readings.

Figure 4. Contact Normal Force :



Contact area (from h1 to h2) is the trace of attrition , when plug mating.

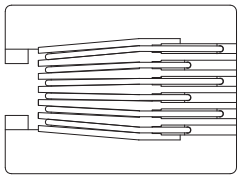
5. VALIDATION

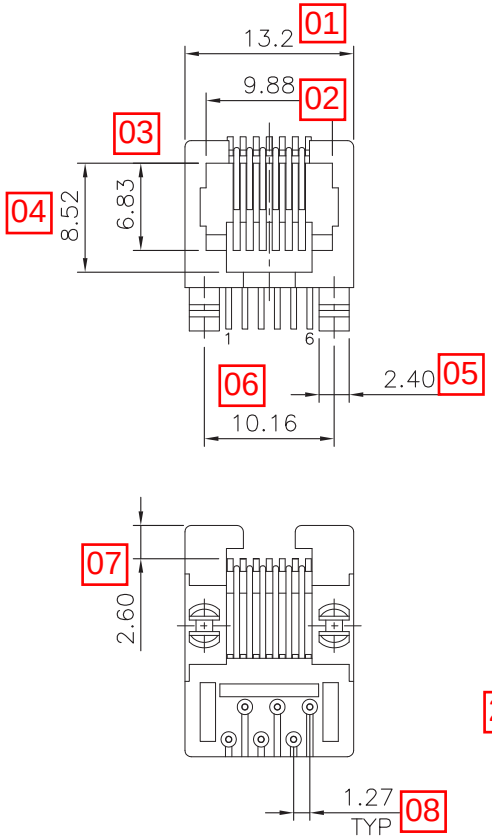
Approved by: Michael Chang

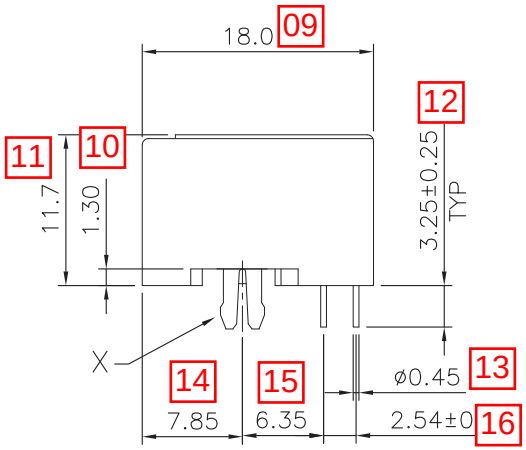
RoHS Compliance

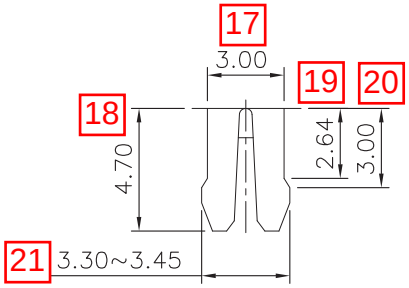
MATERIAL:
- HOUSING—DSM STANYL TE250F6 (NYLON—46)
  HEAT DEFLCTION TEMP.290°
  BLACK COLOR, UL94V—0.
- CONTACTS—0.45mm DIAMETER PHOS—BRONZE
  PLATED WITH HARD GOLD.

CAVITY CONFIRMS TO FCC RULES AND REGULATIONS PART 68,SUBPART F.

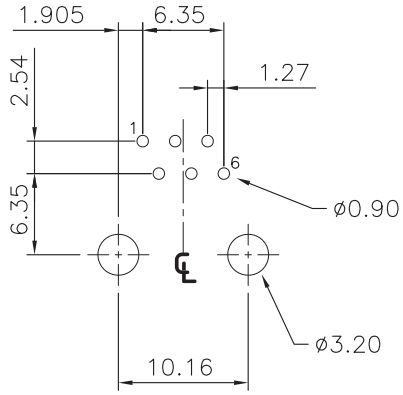








DETAIL X



PC Board Layout
Ref.

DO NOT SCALE DRAWING	TOLERANCES UNLESS OTHERWISE NOTED	INCH	MM	DR. *M.L.HUANG*	DATE JUN—12 '08	Sunny Young Enterprise Co., Ltd. S.Y.E http://www.sunnyyoung.com.tw No.276, Nan-Yang St, Xizhi Dist., New Taipei City 221, Taiwan(R.O.C.) Tel:+886 2 2694 5995(REP) Fax:+886 2 2694 3721
THIRD ANGLE PROJECTION	LINEAR MM / INCH	00 ± .01 000 ± .005 0000 ± .002	0.0 ± 0.25 0.00 ± 0.13 0.000 ± 0.05	CK'D *M.CHANG*	JUN—12 '08	TITLE: 6POSITION, SIDE ENTRY, VERY LOW PROFILE, PCB JACK
MM INCH	ANGLE ± 0° 30'	RADII	± 0.40 — 0.15	APP'D *W.J.YANG*	JUN—13 '08	SCALE SIZE DWG.NO. 969402 / REV. 5 / SHEET 1

QUALIFICATION TEST REPORT QTR-2000 Rev.1A

Title	:	**6POSITION, SIDE ENTRY, VERY LOW PROFILE, PCB JACK**
Part Number	:	**9694-6615-C**
Description	:	**6 Positions 6 Contacts Type**

Inspector:	Date:	Approved By:	Date:
Joey Ho	**2013/09/27**	**Jason Chiu**	**2013/09/27**

TEST RESULT SUMMARY

GROUP A

ITEM	DESCRIPTION	SPEC	TEST CONDITION	HIGH	LOW	AVE.	REMARK
1	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			
	Dimensions (Unit: mm)	1. 13.2±0.25mm	MICROSCOPE	13.21	13.19	13.20	
		2. 18.0±0.25mm	MICROSCOPE	18.04	18.01	18.03	
		3. 11.7±0.25mm	MICROSCOPE	11.73	11.70	11.71	
2	Contact Resistance. (Unit: mΩ)	20 mΩ Max. initial.	DIGITAL MILLI-OHM METER	14.3	10.5	12.4	
3	Mating Force (Unit: Kg)	6 contacts 2.1 Kg max	COMPRESSION/ TENSILE TESTER	1.80	1.62	1.70	
4	Durability	Mate and unmated for 750 cycles Operation Speed: 25mm/min.	AUTO PUSH-PULL EQUIPMENT	PASS			
5	Mating Force (Unit: Kg)	6 contacts 2.1 Kg max.	COMPRESSION/ TENSILE TESTER	1.67	1.44	1.55	
6	Contact Resistance. (Unit: mΩ)	30 mΩ Max. finial.	DIGITAL MILLI-OHM METER	17.3	14.0	15.9	
7	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			

GROUP B

ITEM	DESCRIPTION	SPEC	TEST CONDITION	HIGH	LOW	AVE.	REMARK
1	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			
2	Contact Resistance. (Unit: mΩ)	20 mΩ Max. initial.	DIGITAL MILLI-OHM METER	14.2	11.0	12.7	
3	Humidity test	At 40℃±2 ℃and 90%to 95% for 96 hours.	CONST TEMP.& HUMIDITY CHAMBER	PASS			
4	Contact Resistance. (Unit: mΩ)	30 mΩ Max. finial.	DIGITAL MILLI-OHM METER	17.0	14.2	15.7	
5	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			

TEST REPORT TR-2000 REV.1A

P/N 9694-6615-C

GROUP C

ITEM	DESCRIPTION	SPEC	TEST CONDITION	HIGH	LOW	AVE.	REMARK
1	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			
2	Contact Resistance. (Unit: mΩ)	20 mΩ Max. initial.	DIGITAL MILLI-OHM METER	14.6	11.3	12.9	
3	Dielectric Withstanding Voltage.	1KVrms up at 60Hz	PUNCTURE	PASS			Adjacent contacts
		1.5KVrms up at 60Hz		N/A			Between contact and shield
4	Temperature Life	at 65℃±2℃ for 96 hours.	TEMPERATURE EQUIPMENT	PASS			
5	Dielectric Withstanding Voltage.	1KVrms up at 60Hz	PUNCTURE	PASS			Adjacent contacts
		1.5KVrms up at 60Hz		N/A			Between contact and shield
6	Contact Resistance. (Unit: mΩ)	30 mΩ Max. initial.	DIGITAL MILLI-OHM METER	16.9	14.0	15.8	
7	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. & Drawing.	VISUAL / PLUG	PASS			

GROUP D

ITEM	DESCRIPTION	SPEC	TEST CONDITION	HIGH	LOW	AVE.	REMARK
1	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			
2	Contact Resistance. (Unit: mΩ)	20 mΩ Max. initial.	DIGITAL MILLI-OHM METER	14.7	10.9	12.8	
3	Insulation Resistance	500 MΩ min.	COMPRESSION/ TENSILE TESTER	PASS			
4	Salt Spray	Subject mated connectors to 35±2 ℃ and 5+/-1% salt condition for 48hours.	SALT SPRAY EQUIPMENT	PASS			
5	Insulation Resistance	200 MΩ min.	COMPRESSION/ TENSILE TESTER	PASS			
6	Contact Resistance. (Unit: mΩ)	30 mΩ Max. initial.	DIGITAL MILLI-OHM METER	17.1	14.4	15.6	
7	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			

TEST REPORT TR-2000 REV.1A

P/N 9694-6615-C

GROUP E							
ITEM	DESCRIPTION	SPEC	TEST CONDITION	HIGH	LOW	AVE.	REMARK
1	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			
2	Contact Normal Force (Unit: kgf)	0.1 kgf Min.	COMPRESSION/ TENSILE TESTER	0.143	0.118	0.130	Individually pin of contact area
3	Solderability	Tin coverage : 95% min. of immersed area	Tin Furnace	PASS			
4	Visual & Mechanical Examination	Mechanical Structure & Appearance & Cosmetic Spec. and Drawing.	VISUAL / PLUG	PASS			

測試報告
Test Report

號碼(No.) : CE/2012/A1386　日期(Date) : 2012/10/16　頁數(Page) : 1 of 10

卓新工業股份有限公司
EXCELLENCE WIRE IND CO., LTD.
桃園縣蘆竹鄉長安路二段39巷13號
NO. 13, LANE 39, SEC. 2, CHANG AN RD., LUCHU HSIANG, TAOYUAN HSIEN 338, TAIWAN

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) : GOLD WIRE / 金線
收件日期(Sample Receiving Date) : 2012/10/08
測試期間(Testing Period) : 2012/10/08 TO 2012/10/16

==========

測試需求(Test Requested)：

(1) 依據客户要求，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.)

(2) 依據客户指定，進行全氟辛酸（銨)、全氟辛烷磺酸、鹵素-氟、氯、溴、碘測試. (As specified by client, to test PFOA, PFOS, Halogen-Fluorine, Chlorine, Bromine, Iodine contents in the submitted sample.)

測試方法(Test Method) : 請見下一頁 (Please refer to next pages).

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 results of Cadmium, Lead, Mercury, Cr(VI) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)

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

測試報告
Test Report

號碼(No.) : CE/2012/A1386 日期(Date) : 2012/10/16 頁數(Page) : 2 of 10

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測試結果(Test Results)

測試部位(PART NAME)No.1 : 金色金屬線鍍層 (PLATING LAYER OF GOLDEN COLORED METAL WIRE)
測試部位(PART NAME)No.2 : 金色金屬線底材 (BASE MATERIAL OF GOLDEN COLORED METAL WIRE)
測試部位(PART NAME)No.3 : 金色金屬線 (含鍍層) (GOLDEN COLORED METAL WIRE (INCLUDING THE PLATING LAYER))

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)			法規限值 (Limit)
				No.1	No.2	No.3	
鎘 / Cadmium (Cd)	mg/kg	酸洗脫鍍層, 參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---	---	100
	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	酸洗脫鍍層, 參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---	---	1000
	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	---	21	---	1000

測試報告
Test Report

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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)			法規限值 (Limit)
				No.1	No.2	No.3	
汞 / Mercury (Hg)	mg/kg	酸洗脫鍍層, 參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---	---	1000
	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.	---	1000
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	Negative	---	#
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	---	---	n.d.	-
全氟辛酸 (銨) / PFOA (CAS No.: 335-67-1)	mg/kg	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	---	---	n.d.	-

測試報告
Test Report

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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)			法規限值 (Limit)
				No.1	No.2	No.3	
鹵素 / Halogen							
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	---	---	n.d.	-
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)			50	---	---	n.d.	-
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	---	---	n.d.	-
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	---	---	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)
5. "---" = Not Conducted (未測項目)
6. **= Qualitative analysis (No Unit) 定性分析(無單位)
7. # = 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)

PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm)，在半成品、成品或零部件中不得超過0.1%(1000ppm)，在紡織品或塗層材料中不得超過1μg/m^2。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1μg/m^2.)

測試報告
Test Report

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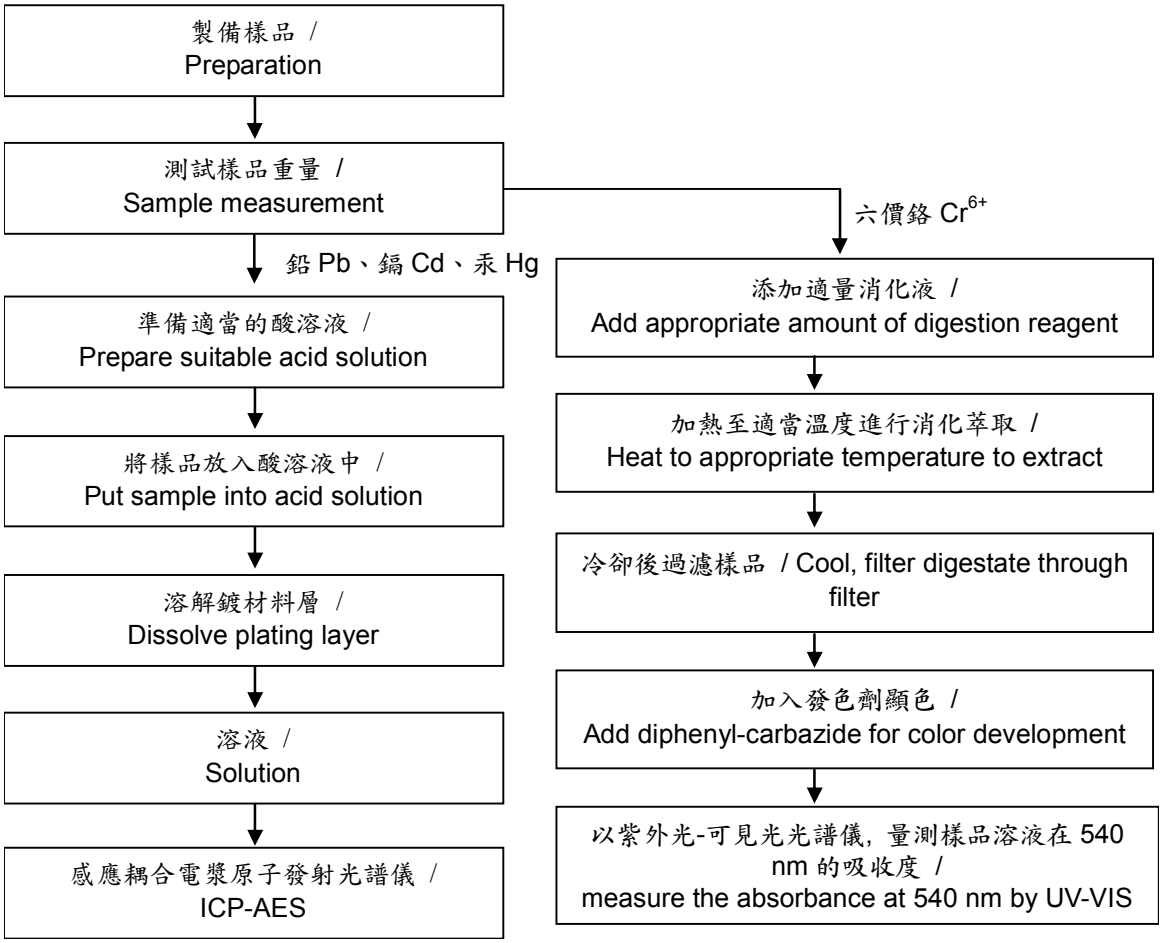
桃園縣蘆竹鄉長安路二段39巷13號
NO. 13, LANE 39, SEC. 2, CHANG AN RD., LUCHU HSIANG, TAOYUAN HSIEN 338, TAIWAN

PART NAME)No.1

1) 根據以下的流程圖之條件，樣品之外部鍍層已完全溶解。(六價鉻測試方法除外) / The plating layer of 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

鍍層重金屬測試流程圖 / Flow Chart of Stripping method for metal analysis



測試報告
Test Report

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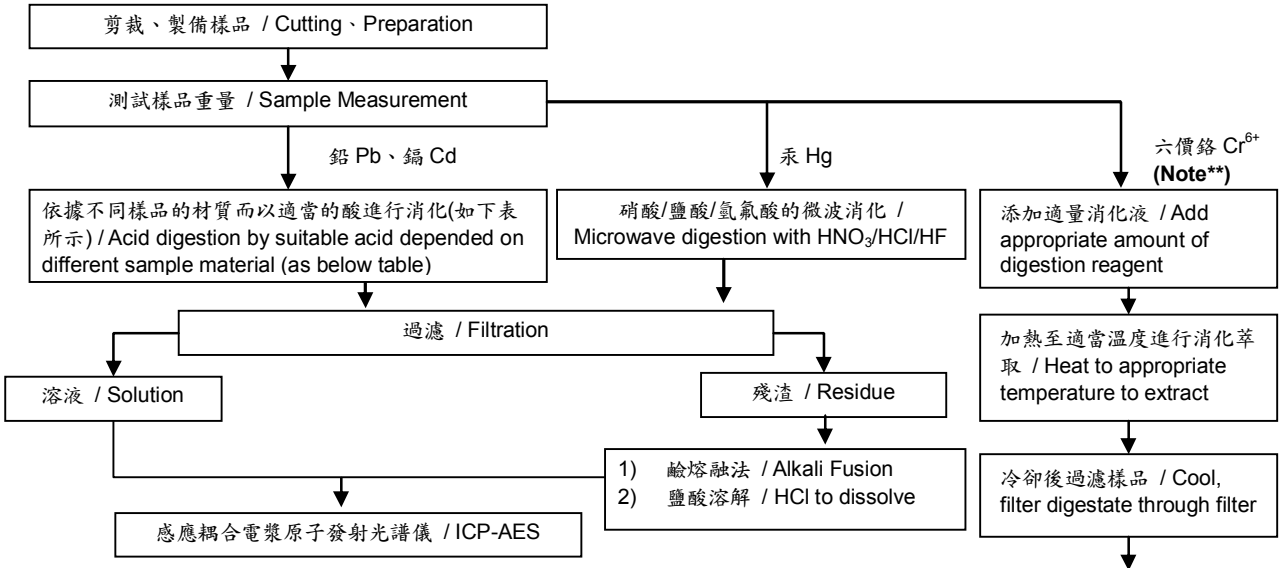
卓新工業股份有限公司
EXCELLENCE WIRE IND CO., LTD.
桃園縣蘆竹鄉長安路二段39巷13號
NO. 13, LANE 39, SEC. 2, CHANG AN RD., LUCHU HSIANG, TAOYUAN HSIEN 338, TAIWAN

PART NAME)No.2

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
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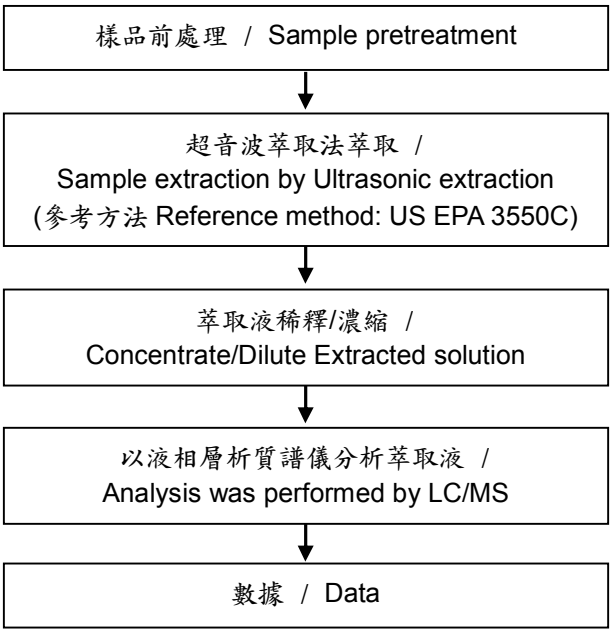
全氟辛酸(鉀)/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 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



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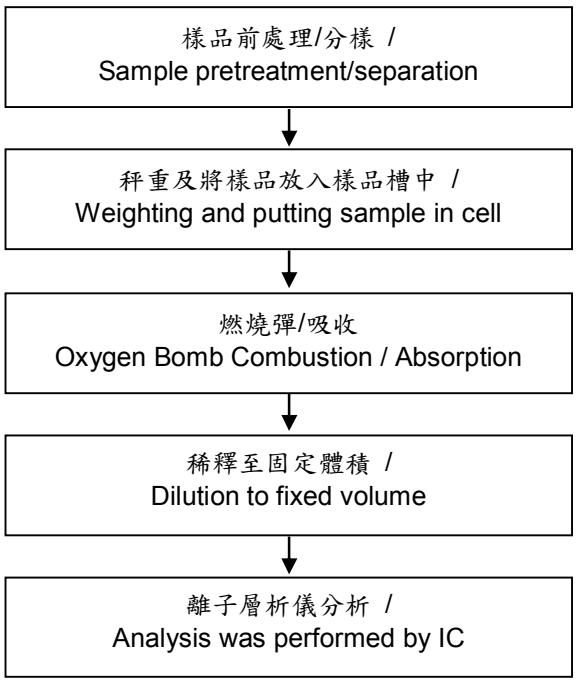
鹵素分析流程圖 / Analytical flow chart of halogen content

1) 測試人員：陳恩臻 / Name of the person who made measurement: Rita Chen
2) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



測試報告
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*** 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/2012/A1386 NO.1

CE/2012/A1386 NO.2

測試報告
Test Report

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CE/2012/A1386 NO.3

** 報告結尾 (End of Report) **

DSM ENGINEERING PLASTICS JIANGSU

NO. 18 PAN LONG SHAN ROAD, JIANGYIN

The following sample(s) was/were submitted and identified on behalf of the clients as : Stanyl TE250F6 11000 Black

SGS Job No. :	SP12-032007 - SH
Date of Sample Received :	05 Nov 2012
Testing Period :	05 Nov 2012 - 08 Nov 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

JJ Fan
Approved Signatory

SGS-CSTC Standards Technical Services (Shanghai) Co.,Ltd.
Testing Center
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233
t E&E (86-21) 61402553 f E&E (86-21)64953679 www.cn.sgs.com
HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA12-192666.004	Black solid pellet

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive 2011/65/EU

Test Method : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	Limit	Unit	MDL	*004*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	21
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

Test Item(s)	Limit	Unit	MDL	*004*
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

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

SGS-CSTC Standards Technical Services (Shanghai) Co.,Ltd.
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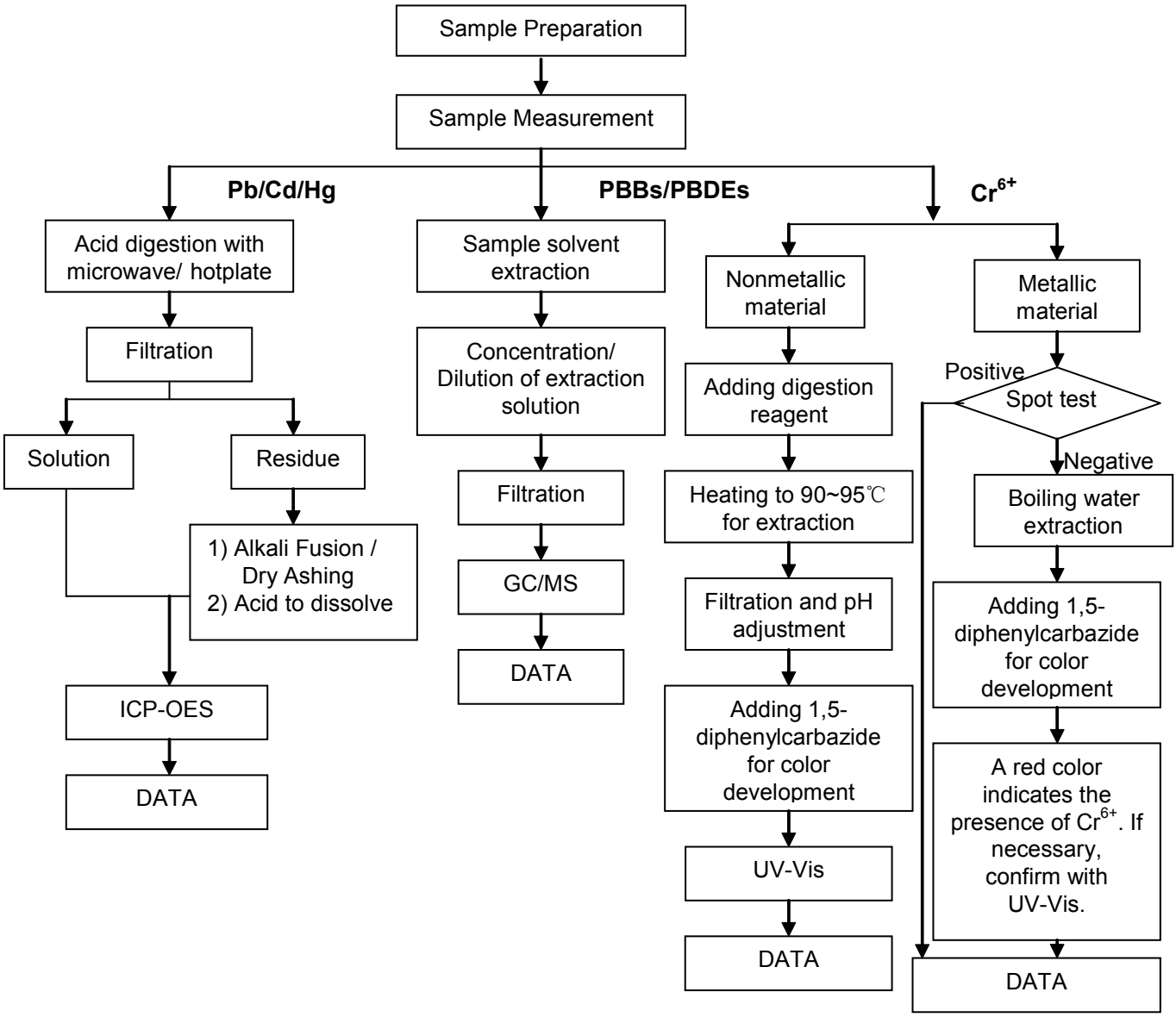
t E&E (86-21) 61402553 f E&E (86-21)64953679 www.cn.sgs.com
HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



Sample photo:

SHA12-192666.004

SGS authenticate the photo on original report only

*** End of Report ***

物 質 安 全 資 料 表

鍍 金 線 (GOLD WIRE)

一、物品與廠商資料

物品名稱： 鍍金線 (GOLD WIRE)　物品料號:	
化學名稱： Cu-Sn-P-Au-Ni 金屬合金	
製造商或供應商名稱：卓新工業股份有限公司	
製造商或供應商地址：桃園縣蘆竹鄉長安路二段 39 巷 13 號	
製造商或供應商電話：8863-3222120(代表號)	傳真：8863-3525455
製造商或供應商網址：www.exw.com.tw	
緊急聯絡電話：8863-3222120	

二、成分辨識資料

產品成份：

化學名稱：銅(Cu)
化學文摘社登記號碼(CAS No.)：7740-50-8
危害物質成分(成分百分比) ： (Cu+Sn+P)>99.5%

化學名稱：錫(Sn)
化學文摘社登記號碼(CAS No.)：7440-31-5
危害物質成分(成分百分比)：5.5-7.0%

化學名稱：磷
化學文摘社登記號碼(CAS No.)：7723-14-0
危害物質成分(成分百分比)：0.03-0.35%

化學名稱：氰化金鉀(Potassium Gold Cyanide)
化學文摘社登記號碼(CAS No.)：554-07-4
危害物質成分(成分百分比)：0.0000137%

化學名稱：鎳(Nickel)
化學文摘社登記號碼(CAS No.)：07440-02-0
危害物質成分(成分百分比)：0.000135%

OHSA：本產品在固體時不具危險性。其粉塵及煙霧：具有危害性

三、危害辨識資料

警告： 長時間曝露於粉塵及煙霧的工作環境下，對於眼睛、呼吸系統、皮膚會造成刺激傷害，必須配戴保護器具，包括護目鏡、適當衣物，必須要保護全部身體。身體被接觸之部位，必須徹底清洗乾淨。

種類的名稱：銅、錫、磷、金、鎳之混合物
危害標示類別：金屬粉塵或煙霧將對皮膚、眼睛造成刺激性且對肺具有毒性，但金屬成品本身不具危害性
危害級數(粉塵及煙霧)：健康：1 ；可燃：0 (0=低、4=極高)

四、急救措施

對於粉塵及煙霧危害之急救方法： • 吸入時：送至通風良好較陰涼處休息，以毛巾保暖，嚴重者迅速送醫院檢查診斷 • 皮膚接觸：以清水清洗乾淨 • 眼睛接觸：以大量清淨水沖洗上下眼皮內部(至少 15 分鐘)，若眼睛被刺激不適者，立即送醫檢查 • 食入時：大量喝水並摧吐，迅速送醫檢查
對急救人員之防護：避免直接接觸及呼入患者的呼吸

五、火災及爆炸危害資料

爆炸性：無
可燃性：無
燃燒性：無
閃火點：不適用
自燃性：不適用

滅火劑

滅火方式：使用滅火劑於材料表面即可

消防建議

注意粉塵可能導致爆炸或產生可燃燒氣體

六、洩漏的處置

本產品在加工時產生粉塵時，有可能產生爆炸，必須將火源移除，也惟有粉塵型態時才可能產生洩漏，所以必須裝設吸塵裝置，過濾空氣中之粉塵，以降低其粉塵濃度
洩漏於空氣中：不適用
洩漏於水中：不適用
洩漏於地面中：不適用

七、取用及儲運方式

取用注意事項

軋延產品之端面易割傷皮膚應小心取用。 切削加工時會產生粉塵應小心眼睛、皮膚及呼吸應配戴保護器具。 小心粉塵不可洩漏至空氣中。 需注意產品有翻倒之危險性易造成壓傷，吊運時要十分注意。 打包帶剪除時，小心其末端會彈起，對人員之身體、皮膚及眼睛造成割傷。 衣物或器具上之粉塵應以水洗或吸塵器清潔，不可用拍打或其它方式處理。

儲存條件

倉儲最高容許溫度：無 避免放置於潮濕或酸/鹼性物質或酸/鹼性氣體之場所

八、人員曝露防護措施

Cu 曝露標準		OSHA(PEL)		ACGIH(TLV)	
		ppm	mg/m^3	ppm	mg/m^3
	煙霧	無	0.1	無	0.2
	粉塵	無	1	無	1
Sn 曝露標準		OSHA(PEL)		ACGIH(TLV)	
		ppm	mg/m^3	ppm	mg/m^3
	粉塵	無	2	無	2
P 曝露標準		OSHA(PEL)		ACGIH(TLV)	
		ppm	mg/m^3	ppm	mg/m^3
	粉塵	無	0.1	無	0.1

Au 曝露標準		OSHA(PEL)		ACGIH(TLV)	
		ppm	mg/m^3	ppm	mg/m^3
	粉塵	無	5	無	10
Ni 曝露標準		OSHA(PEL)		ACGIH(TLV)	
		ppm	mg/m^3	ppm	mg/m^3
	粉塵	無	1	無	2
呼吸防護	長時間曝露於粉塵及煙霧的工作環境下，需要呼吸防護器具，配戴 NIOSH 認證防塵口罩				
通風防護	工作場所中，若是會產生煙霧及粉塵時，必須要有通風設備裝置及集塵裝置，且工作中不可飲食及抽煙				
眼睛及皮膚防護	需要配戴護目鏡，防護手套防止割傷				
人員防護	作業時應著適當之工作服及安全鞋				

九、物理及化學性質

外觀：金黃色光澤的固態金屬
熔點：1000-1075℃
沸點：無資料
比重：8.84
蒸氣壓：不適用
溶解度：不適用
PH 值 25℃：不適用

十、安定性及反應性資料

非活性物質

十一、毒性資料

粉塵：食入、皮膚接觸、吸入、眼睛接觸 煙霧：吸入、眼睛接觸、皮膚接觸 本產品的成品不具毒性

動物毒性：本合金產品不具毒性
其單一成份之毒性說明如下供參考 皮膚腐蝕性：無此資料 刺激性行(皮膚、眼睛)：金產品粉塵會產生接觸性皮膚炎

急性毒性：銅的粉末經口食入，會有急性中毒症狀：嘔吐、無力感及胃疼，粉塵吸入過多，會有胸痛、發燒等症狀。磷的急性中毒症狀：肝病變、嘔吐、下痢、肝、腎的脂肪病變、肝臟肥大、黃疸、血尿及呼吸困難。金的急性中毒症狀：大劑量，會因抑制呼吸中樞而突然我去意識，和因呼吸停止而造成死亡。鎳急毒性：與皮膚接觸，可能產生過敏發紅，粉塵會刺激眼睛。

慢性毒或長期毒性：錫的煙霧粉塵長時間吸入會導致肺部功能減退。磷會有食慾不振、消化不良、體重減輕、貧血、黃疸、粘膜出血、糖尿病、視力減退等症狀出現。長期露在低濃度的氰化物環境中，有造成甲狀腺變大的甲狀腺病變，甚至於單一劑，也會改變腦部的代謝，包括了降低氧化代謝和促進醣解作用。鎳慢性或長期毒性：會造成肺癌及竇癌。

粉塵、煙霧會讓原有氣喘、肺氣腫之病患病情加重。

十二、生態資料

本產品的成品對生態具毒性

分解性：無資料

蓄積性：無資料

突變性：本產品沒有資料顯示會造成突變性

魚毒性：水中的銅濃渡，在 0.015-3.0mg/l，尤其在軟水中，曾有報告會對許多種類的魚、甲殼類的動物及軟體動物、浮游生物具有毒性。金有生物累積效應，會隨著生物鏈增加毒性濃度，對於水中生物極具有毒性，也對於陸地上的生物具有毒性。空氣中的鎳塵通常都會沈澱或沖洗至土壤或水中，土壤種的鎳可能部份會被沖刷或過濾而流入地下水。鎳在地下水中的流佈則視其產生的物理或化學反應(例如複合、溶解、吸附、氧化、還原)而定。

十三、廢棄物處置方法

廢棄物處置方法：氰化物必須經由氧化後才能廢棄，依氰化鹼式分解法處理，再以中和法處理，均需現行法規處理。本產品屬於危害性廢棄物，須丟棄時可以委託回收商予以回收再生處理。處理後密封於容器內，用合格的衛生掩埋法處理。

十四、運送資料

運送時本產品不要直接與水接觸，並且要注意會有滑落、翻落的危險發生

十五、法規資料

通常無特定法令規定，但是在會產生粉塵的場所必須遵守勞工安全衛生法勞工作業環境

空氣中有害物質容許濃度標準與事業廢棄物貯存清除處理方法及設施標準。
USA/OHSA：Occupational Safety ＆ Health Administration
USA/ACGIH Guide to protective Clothing. Cincinnati, OH：American Conference of Government Industrial Hygienists,1987
USA/SARA313

十六、其他資料

本 MSDS 內容資料應被所有使用、運送、儲存或曝露於本產品之公司/人員充份了解與接受並將其應用於使用、加工、製造或管理與本產品有關之作業規定上。本 MSDS 資料內容在編定時已儘可能將最新之資料納入，但對所有內容並不予以任何保證

十六、其他資料

製表單位	名稱：卓新工業股份有限公司						
	地址/電話：桃園縣蘆竹鄉長安路二段 39 巷 13 號/03-3222120 #236						
製 表 人	職稱：環境專員		姓名(簽章)：楊昀哲				
製表日期	民國九十三年十二月二十一日星期二						
核準		審查		制訂		發文章	

附表六　危害物質清單

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化學名稱：____________________

同義名稱：____________________

物品名稱：____________________

物質安全資料表索引碼：____________________

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製造商或

供 應 商：________________________________

地址：________________________________

電話：________________________________

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使用資料

地　　點	使用頻次	數　量	使用者

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貯存資料

地　　點	數　量

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製單日期：________________________________

Safety Data Sheet

DSM

complies with: directive 91/155/EEC
ISO 11014-1:Safety data sheet for chemical products.

revision: 2.0
revision date: 02/02/1998
date of issue: 26/02/1998

p

1. Product and company identification

Product name: Stanyl®

Product code: TE250F6

Manufacturer: DSM Engineering Plastics
P.O. Box 43,
6130 AA Sittard
The Netherlands

Emergency number: The Netherlands +31 (0)46 4 76 55 55

2. Composition/Information on ingredients

This chemical product is a preparation

Chemical nature: (poly)amide PA 46

CAS number: 50327-22-5

Components contributing to the hazard:

The material contains Sb_2O_3 as a synergist with an average content of max. 7%. Sb_2O_3 is classified as a harmful (Xn) substance with a risk phrase R40 carcinogen class 3. However, the Sb_2O_3 is embedded in an impervious matrix of polymer and is therefore less biological available than the free Sb_2O_3 (see also Section 15).

3. Hazards identification

Most important hazards:

Hazard warning not required

Specific hazards:

Vapour and fumes released at elevated processing temperatures may be irritant for the eyes, the nose, the throat and the respiratory tract and in case of overexposure may cause nausea and headache.

The material is not classified as being a dangerous preparation according to the EEC-Directive 88/379 and the subsequent amendments. See also Section 15.

4. First-Aid measures

Inhalation:

When fumes of molten material have been inhaled;
- Move person to fresh air as quickly as possible
- rest in half upright position
- loosen clothing
- keep warm

In case of respiratory problems move person to first aid station for medical treatment.

Skin contact:

Any molten material on the skin/burns should be cooled (off) as quickly as possible by means of cold water. Cover the wound with sterile cloth and move person to first aid station or hospital for medical treatment. Attention: never pull off the molten material from the wound.

Eye contact:

Any material entering the eye should be flushed out with copious volumes of water.

Ingestion:

No danger of toxicity, this material is biologically inactive (see also Section 11).

5. Fire-fighting measures

Extinguishing media:

Water, water/foam, CO_2, ABC fire extinguisher powder.

Specific Hazards:

Treat the material as a solid that can burn. Moulded parts or solid granules generally burn slowly with flaming drips.

In case of fire carbon monoxide, ammonia, volatile antimony compounds and brominated organic compounds are released in addition with traces of polybromo-dibenzodioxines and polybromo-dibenzofuranes may originate from the brominated organic flameretardant.

Protection for the fire-fighters:

Do not approach fire in confined space without positive pressure self breathing apparatus and full bunker gear: bunker coats, helmet with face shield, gloves, rubberboots.

6. Accidental release measures

Personal precautions:

- Apply ample grounding with respect to dust explosion danger caused by released dust from granulate supply (filters): see section 7.
- Protection of skin/eye/hand: see section 8.

Environmental precautions:

Disposal considerations- see section 13.

Cleaning up methods:

Shovel or sweep up, use especially industrial vacuum cleaner to suck possible fines/dust. Avoid generating dust clouds. Put into containers for reclaiming or disposal.

7. Handling and storage

Handling

Technical measures:

Make provisions for sufficient ventilation and local exhaust at vent, nozzle and ejected melt.

Precautions:

Dust and processing fumes must be removed by effective exhaust ventilation.

For safe polymer processing the material should have a water content <2%. In order to prevent a drop in material properties the water content during processing should be <0.1%.

Storage

Technical measures and storage conditions:

The material should be stored on a dry place.

Incompatible products:

Stack pallets only two high when storing in order to prevent collapsing.

8. Exposure controls/personal protection

Control parameters:

Threshold Limit Value (TLV): a provisional TLV (TWA 8 hours) is advised in accordance with the TLV of non-toxic nuisance dust:
-10 mg/m^3 for total dust.
- 5 mg/m^3 for respirable dust.

Personal protective equipment:

- Respiratory protection: when TLV is accidentally exceeded see section 7 (prevention dust generation).

- Hand protection: when handling a hot melt, heat resistant gloves should be worn (e.g. when purging a processing machine).

- Eye protection: when handling a hot melt, heat resistant face shields should be worn (e.g. when purging a processing machine).

- Skin and body protection: the use of apron, boots and/or full protective suit is not prescribed here; it is up to the decision of the processor.

Hygiene measures:

Adequate washing facilities, with supplies of mild soap and hand cleanser should be available at all working locations. Solvents should never be used as hand cleansers. Smoking, eating and drinking in working and storage area's should be prohibited.

9. Physical and chemical properties

Physical state	: solid, at 20°C.
Form	: granulate.
Colour	: natural opaque, dependent on added pigment.
Density	: > 1.0 g/cm^3.
Melting point/range	: 295°C.
Odour	: no special odour.
Solubility in water	: insoluble.
Decomposition Temp.	: > 350°C.
Flashpoint	: > 375°C.
Auto Ignition Temp.	: > 420°C.
Dust Explosive Properties:	
Lower Explosion Limit (LEL)	: < 10g/m^3.
Minimum Ignition Temp.	: 410°C.
Dust Explosion Class (st)	: 1

10. Stability and reactivity

Stability:

The material is chemically unreactive. Under certain conditions however hazardous reactions can take place.

Conditions to be avoid:

Temperatures >340° C and/or long residence times should be avoided since thermal degradation occurs.

Materials to avoid:

Strong oxidising agents.

Hazardous decomposition products:

At processing temperatures some degree of thermal degradation will occur. Although highly dependent on temperature and environmental conditions, traces of a variety of toxic and/or irritating gases may be evolved, e.g. cyclopentanone, ammonia and organic nitrogen compounds such as diaminobutane, pyrrole and pyrroline and brominated organic compunds.
Under normal processing conditions, the concentrations are extremely low and with the health and safety information available these species are not considered to impose any hazard at the concentration level found.

11. Toxicological information

Acute toxicity:	None (LD_{50} oral rat >5000 mg/kg)
Local effects:	The material appears to be a non-toxic substance in standard toxicological and ecotoxicological tests and is regarded as biologically inactive.

12. Ecological information

Persistence/degradability:	very low UV degradability.
Ecotoxicity:	no indication that this material is being a risk to the environment.
Aquatic toxicity:	insoluble non toxic solid material (no water hazard).

13. Disposal Considerations

This material - as well as the packaging there off - presents no danger regarding toxicological and/or ecological considerations. It can be burnt in a controlled way or be disposed of via Landfill, or it can be recycled for - possibly less critical - non food applications.

Note: Additional national or regional provisions may be in force within this matter.

14. Transport information

General precautions Keep this material dry during transport.

Special precautions No special precautions have to be met.

This material is not classified according to the recommendations of the UN (8. edition) on the transport of dangerous goods.

15. Regulatory information

Labelling according to EEC directive 88/379/EEC and subsequent amendments is not required. Additional national legislation may be in force in this matter.

EEC classification: No dangerous preparation.

R(isk) phrases: N.a.

Polyamide 46 is TSCA registered under number 50327-77-0

16. Other information

None of the materials and/or products referenced herein should be used and/or applied in any product, device or material used or for use as human body implant or otherwise within the human body.

* represents changes made to the document since the last revision date of the document.

Measurements by an independent German institute have shown that the material is in compliance with the severest formulation of the so-called Dioxine Ordinance (published January 21st 1993)[1)].

[1)]Verordnung zur Ausweitung der Verbote von Stoffen, Zubereitungen und Erzeugnissen, die bestimmte polyhalogenierte Dibenzo-p-dioxine (PHDD) und bestimmte polyhalogenierte Dibenzofurane (PHDF) enthalten.

For information on material safety contact:

DSM Engineering Plastics
Technical Marketing
P.O.Box 604
6160 AP Geleen
The Netherlands
Tel +31(0) 46 4 76 12 16
Fax +31(0) 46 4 76 07 96

DSM Engineering Plastics Asia Pacific
No. 476, Li Bing Road, Zhangjiang High-Tech Park, Pudong Area
Shanghai 201203 P. R. China

DSM

To whom it may concern:

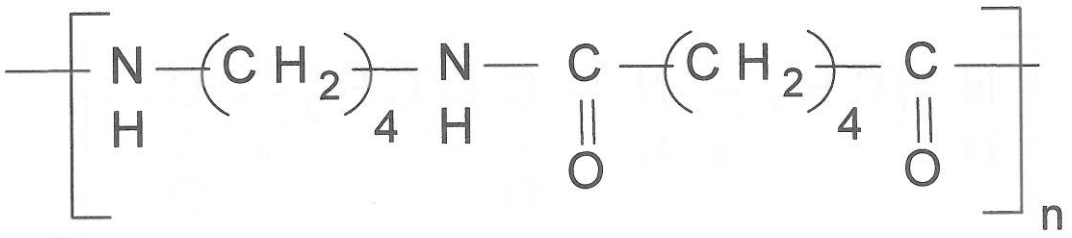
We hereby declare the contents and base polymer of Stanyl grades as below.

List of Stanyl Grade
TE250F3, TE250F6, TE250F8, TE250F9, TS250F4D, TS250F6D, TS250F8, TS200F6, 46HF5040, 46HF5050, 46SF5030, TW341, TW371, TW241F6, TW241 F8, TW241F10, TE351, TS350, TW271F6

Contains

PA46 (polyamide46)	20 to 100 w/w%
GF(Glass Fiber)	0 to 50 w/w%
FR(Flame retardant)	0 to 30 w/w%

Molecular structure of Base polymer: PA46(polyamide46)



舒九妮

Shu Jiu-Ni
Product Data Officer
DSM Engineering Plastics Asia Pacific

DSM Engineering Plastics Asia Pacific
No. 476, Li Bing Road, Zhangjiang High-Tech Park, Pudong Area
Shanghai 201203 P. R. China

DSM

敬启者

我们在此申明 Stanyl 各规格成分和基料如下：

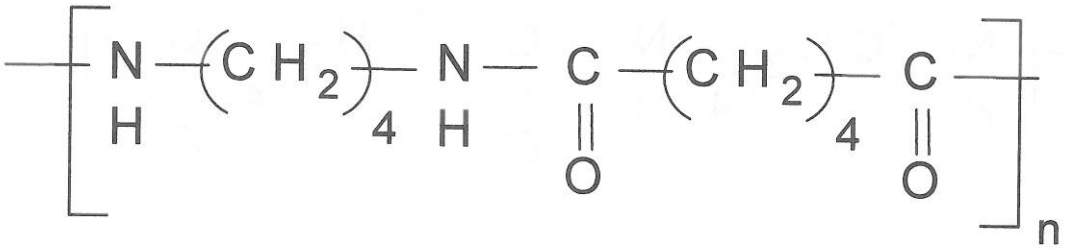
Stanyl 的规格

TE250F3, TE250F6, TE250F8, TE250F9, TS250F4D, TS250F6D, TS250F8, TS200F6, 46HF5040, 46HF5050, 46SF5030, TW341, TW371, TW241F6, TW24 1F8, TW241F10, TE351, TS350, TW271F6

成分

PA46(聚酰胺 46)	20 - 100 w/w%
GF(玻璃纤维)	0 - 50 w/w%
FR(阻燃剂)	0 - 30 w/w%

基料分子结构式：PA46(聚酰胺 46)



舒九妮

舒九妮
产品数据主任
帝斯曼工程塑料亚太区

양식번호	YL-B401-6	試驗成績書	永 林 電 子
改正番浩			Office 71-1,Yangbeol-ri, Opo-yup, Kwangju-si, Kyunggi-do, Korea
改正日字	2002.12.20	2008 年 02 月 26 日	TEL(82-31)766-0270 FAX(82-31)765-4890

納 品 處	EXW			規格名	
規 格	Ø0.450mm	硬 度	H	品 名	C5100W
LOT.NO				名 稱	PBW

區 分	値 數			公 差	外 觀	LOT.SIZE	
	規 格	規 格	規 格			Roll	KGS
SPEC	Ø0.450mm	Ø0.450mm		+0.005 -0.000			4,907.3
DATA	Ø0.452mm	Ø0.453mm			OK		

化 學 成 分

區 分	化 學 成 分 (%)							
	Cu	Pb	Ni	Sn	Fe	Zn	P	Cu+Sn+P
SPEC	Rem	0.05max	-	4.2~5.8	0.1max	0.3max	0.03~0.35	99.5min
DATA	95.1520	0.0000	0.0000	4.6802	0.0031	0.0521	0.1125	

機械的 . 物理的 性質

區 分	機械的性質				
	引張强度(N/mm^2)	延伸率(%)	Resistance(mΩ/4cm)	Bend(90°)	
SPEC	950 ~1100	-	23 ~ 27	7 ~ 8	
DATA	968		24.2	7	

We centify above test results are true and correct.

永 林 電 子

品質管理擔當者 : 鄭 然 模

綜合判定