

設計驗證
工程課
2024 -05- 02
發行
鈺鑾科技開發股份有限公司

承　　認　　書

SPECIFICATION　FOR　APPROVAL

客戶:鈺緯科技開發股份有限公司

品名:銅箔膠帶

規格:30mm*25mm*0.08t(含膠)

料號:3H230000100 (H0138)

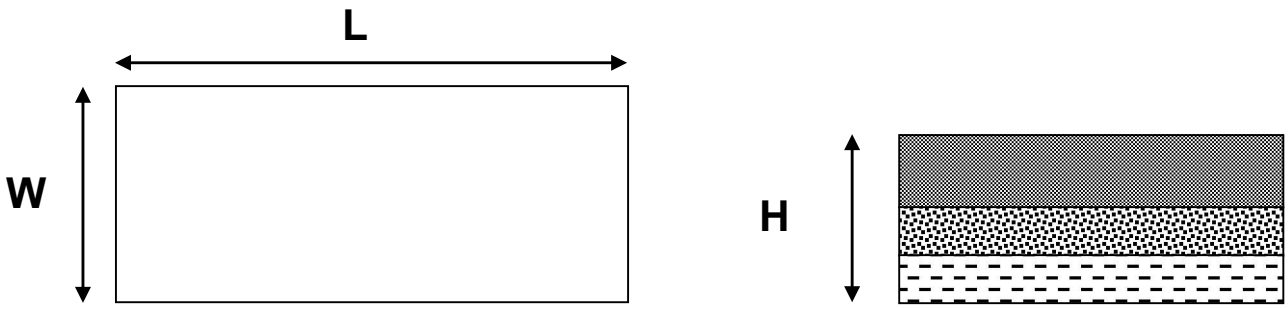
設計驗證
工程課
2024-05-02
發行
鈺緯科技開發股份有限公司

主　管	審　查	製　作
游鈺衡	游鈺崧	王瀞融

俐　元　企　業　股　份　有　限　公　司
俐　誠　企　業　股　份　有　限　公　司
LI YUN　ENTERPRISE CO., LTD.
LI CHENG ENTERPRISE CO., LTD.
地　址　:　新　北　市　樹　林　區　三　龍　街　２　０　－　１　號
電話:(02)8688-8680　　傳真:(02)8688-8678

中　華　民　國 113 年 05 月 02 日

銅箔膠帶-圖面表



：COPPER

：Acrylic conductive pressure sensitive adhesive

：Release paper

設計驗證
工程課
2024 -05- 02
發行
旺榮科技開發股份有限公司

3H230000100(H0138)

銅箔膠帶規格
COPPER TAPE

長度 Length	30mm ±0. 5 mm
寬度 Width	25mm ± 0.5 mm
厚度 Thickness	0.085mm± 0.03 mm
背膠寬 TAPE-W	全背膠

俐元企業股份有限公司
俐誠企業股份有限公司

成品出廠檢驗表

表單編號：FM-42A

客戶名稱	鈺緯科技開發股份有限公司	訂單號碼		交貨數量	
料號	3H230000100(H0138)	品名規格	銅箔膠帶 30mm*25mm*0.08t(含膠)	檢驗日期	

序號	規　格	檢　驗　值					檢驗結果	
	依客戶圖面檢驗	1	2	3	4	5	OK	NG
1	0.08 T± 0.03	0.08	0.07	0.09	0.07	0.09	✓	
2	30 ± 0.5	30.10	30.08	30.09	30.10	30.08	✓	
3	25 ± 0.5	25.07	25.08	25.06	25.07	25.08	✓	

主管: 游閔智　　品管組長: 黃惠珍　　品檢員: 林素后

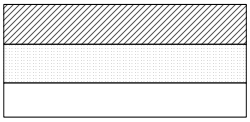
武誼實業有限公司

TEL:02-23365111;FAX:02-23361699

100 台北市中正區和平西路 2 段 140 號 1 樓

導電銅箔膠帶規格表

CONDUCTIVE COPPER FOIL TAPE SPECIFICATION

品名 Article Name	導電銅箔膠帶 Conductive Copper Foil Tape	**構造 Construction**	 銅 箔 Copper Foil 導電膠 Conductive Adhesive 離型紙 Liner
產品編號 Code	WI-C501		

面層 Surface Material			底紙 Liner		
項目 Items	**單位** Unit	**規格值** Spec Value	**項目** Items	**單位** Unit	**規格值** Spec Value
材料物質 Article Matter	--	SCHLENK CU58	材料物質 Article Matter	--	牛皮紙
厚度 Thickness	mm	0.05±10%	厚度 Thickness	mm	0.12 ±0.02
寬度 Width	mm	650	基重 Basic Weight	g /㎡	＜ 220
硬度 Hardness	HV	40-60	顏色 Color	--	白色
顏色 Color	--	亮黃銅色	印刷性 Printable	--	不適

產品物性與化性 Physical Properties & Chemical Prop

膠系 Adhesive Base	--	乳化型壓克力	耐候性 Weathering Resistance	--	良
膠厚 Coating Thickness	mm	0.03 ±10%	保持力 Holding Power	inch / min	≒ 750
初期力 Initial Tack	7# /cm	≦ 10	適用溫度 Temperature Range	℃	5~100
初期黏著力 Initial Adhesion	Kg / 25mm	≧0.65	庫存條件 Storage Condition	℃ / R.H	25 / 75
黏著力 Adhesion	Kg / 25mm	≧1.0	庫存有效期限 Storage Validity	month	6
膠面傳導阻抗 Coating Conductive Resistance	25mm2 / Ω	< 0.05	總厚度 Whole Thickness	mm	0.08±0.005

產品外觀與規格變更時恕無法個別通知，使用本公司產品時請先聯絡，本公司會為貴公司設計最適用的產品。REV:2008/09/05

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 26.02.2021 *Version number 101* *Revision: 18.03.2020*

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**

- **Trade name: ETP Copper Foil E-Cu58**
- **CAS Number:**
  7440-50-8
- **EC number:**
  231-159-6
- **Registration number** 01-2119480154-42
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
  No further relevant information available.
- **Application of the substance / the mixture** Electrical engineering

- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
  Schlenk Metallfolien GmbH&Co. KG
  Barndorfer Hauptstr.5
  91154 ROTH, GERMANY
  TEL: +49 9171 808-0; FAX: +49 9171 808-200
  e-mail: MSDS@schlenk.de - Internet: www.schlenk.de

- **Informing department:**
  Department RA Tel.: +49 9171 808 320
  Fax : +49 9171 808 208
  Mail : MSDS@schlenk.de
- **1.4 Emergency telephone number:** +49 9171 808 0

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
  The substance is not classified, according to the CLP regulation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Designation:**
  7440-50-8 COPPER
- **Identification number(s):**
- **EC number:** 231-159-6

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information** Take affected persons into the open air.

(Contd. on page 2)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 26.02.2021 Version number 101 Revision: 18.03.2020

Trade name: ETP Copper Foil E-Cu58

(Contd. of page 1)

- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact** Clean with water and soap.
- **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
- **After swallowing** In case of persistent symptoms consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents** Water.
- **5.2 Special hazards arising from the substance or mixture**
No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** Do not inhale explosion gases or combustion gases.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Keep away from ignition sources
- **6.2 Environmental precautions:** Do not allow to enter drainage system, surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.

- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:** None.
- **Storage class** 13
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **8.1 Control parameters**
- **Components with critical values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the compilation were used as basis.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 26.02.2021 Version number 101 Revision: 18.03.2020

Trade name: ETP Copper Foil E-Cu58

(Contd. of page 2)

- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures should be adhered to in handling the chemicals.
- **Breathing equipment:** Not required.
- **Protection of hands:**



Protective gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
Leather gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** not mandatory.
- **Skin protection:**



Protective work clothing.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**	
- **General Information**	
- **Appearance:**	
Form:	Foil
Colour:	Copper coloured
- **Smell:**	Odourless
- **Odour threshold:**	Not determined.
- **pH-value:**	Not applicable.
- **Change in condition**	
Melting point/freezing point:	1059-1069 °C
Initial boiling point and boiling range:	Not determined
- **Flash point:**	Not applicable
- **Flammability (solid, gaseous)**	Product is not flammable.
- **Decomposition temperature:**	Not determined.
- **Self-inflammability:**	Product is not selfigniting.
- **Explosive properties:**	Product is not explosive.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 26.02.2021 Version number 101 Revision: 18.03.2020

Trade name: ETP Copper Foil E-Cu58

(Contd. of page 3)

- **Critical values for explosion:**	
Lower:	Not determined.
Upper:	Not determined.
- **Vapor pressure:**	Not applicable.
- **Density at 20 °C**	8.9 g/cm³
- **Relative density**	Not determined.
- **Vapour density**	Not determined.
- **Evaporation rate**	Not determined.
- **Solubility in / Miscibility with**	
Water:	Insoluble
- **Partition coefficient: n-octanol/water:**	Not determined.
- **Viscosity:**	
dynamic:	Not determined.
kinematic:	Not applicable.
- **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No hazardous reaction when handled and stored according to provisions.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if handled and stored according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.

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Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 26.02.2021 Version number 101 Revision: 18.03.2020

Trade name: ETP Copper Foil E-Cu58

(Contd. of page 4)

- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous to water.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Smaller quantities can be disposed with household garbage.

- **European waste catalogue**	
16 00 00	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 01 00	end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)
16 01 18	non-ferrous metal

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number** - **ADR, ADN, IMDG, IATA**	Void
- **14.2 UN proper shipping name** - **ADR, ADN, IMDG, IATA**	Void
- **14.3 Transport hazard class(es)** - **ADR, ADN, IMDG, IATA** - **Class**	Void
- **14.4 Packing group** - **ADR, IMDG, IATA**	Void
- **14.5 Environmental hazards:**	Not applicable.
- **14.6 Special precautions for user**	Not applicable.
- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
- **Transport/Additional information:**	Not dangerous according to the above specifications.
- **UN "Model Regulation":**	Void

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008** GHS label elements

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 26.02.2021 Version number 101 Revision: 18.03.2020

Trade name: ETP Copper Foil E-Cu58

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- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **National regulations**
- **Decree to be applied in case of technical fault:**
Critical quantity values according to the regulations on accidents should be adhered to.
- **Other regulations, limitations and prohibitive regulations**
- **Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing data specification sheet:** Department RA
- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative

20230526

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPERATION AND THE COMPANY

Product Name : **C025**

Chemical Name: Acrylic Resin copolymer

Company Information : WI EI Co., Ltd.
No.140,Sec.2,Heping W. RD
Taipei City,100Taiwan R. O. C.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization: Solvent base Acrylic Vinyl Acetate Copolymer

Hazardous Material	Concentration (%)	Hazardous Classification
Acrylic Resin Copolymer	43-47	-
Ethyl Acetate	25-27	3 flammable liquid
Toluene	25-27	3 flammable liquid

3. HAZARDS IDENTIFICATION

Health effects: Irritate to nose, throat, respiratory system, skin & eyes, induce to fatigue, dizziness & disgust.

Environment effects: Vapor will escape into air, the viscous liquid is not easy to disperse and not solvable with water, so not much contaminate the water.

Physical & Chemical Hazards : Vapor and Liquid are flammable, the vapor is lighter than air and will cause fire if contact with sources of ignition.

Special Hazards : Currently unknown.

Main Symptoms: Irritate to nose, throat, respiratory system, dizziness, headache & confusion.

Hazard classification: 3- flammable liquid

4. FIRST AID MEASURES

Inhalation: Safety equipment is recommended for personal protection to prevent contact with the material, remove the patient to a place with fresh air. If the patient stop breath, a mouth to mouth breath is needed immediately by a well trained person, and CPR required if stop heart beating. Then obtain medical attention.

Skin Contact: Remove all contaminated clothing and shoes immediately under drench shower, remain under the shower for at least 10 minutes until no evidence of chemical remain

on skin, and obtain medical attention if still irritation. The contaminated clothing and shoes should be cleaned completely.

Eye Contact: Immediately remove the excess chemical, and slow flush with warm water for 10 minutes, do not let the contaminated flush water flush into other eye, and obtain medical attention if still irritation .

Ingestion Never give anything by mouth to or induce vomiting in person who is convulsing or unconscious. The patient should rinse out the mouth and drink with plant of water if conscious. If the patient stop breath, a mouth to mouth breath is needed immediately by a well trained person, and CPR required if stop heart beating. Then obtain medical attention.

Main Symptoms and Hazardous Effects: irritation, dizziness

Personal protection for the first aid person: wear with gloves

Indication for physician: stomach wash may be required if ingestion

5. FIRE-FIGHTING MEASURES

Extinguish media: Use alcohol foam, CO2, dry chemical as extinguish media.

Special hazards may occurred during fire-fighting: Vapor is lighter than air and will cause fire again if contact with sources of ignition. The vapor will be vaporized faster in higher temperature, and cause the container is cracked and explosive in fire.

Special fire-fighting procedure: water spray is not suitable for fire fighting, but it can absorb the heat and cool down the temperature of container, and protect exposed material to eliminate the vapor gas.

Protection for fire fighter: Protective clothes, gloves and respiratory apparatus.

6. ACCIDENTAL RELEASE MEASUREMENT

Personal precautions The contaminated area is restricted for enter before clean completely, exchange with fresh air. Use personal protective equipment, and remove any sources of ignition.

Environmental precautions : Exchange with fresh air to the contaminated area, and remove any sources of ignition.

Methods for cleaning up : Do not direct touch the leaking material, and collect it in a proper container.

7. HANDLING AND STORAGE

Handling precautions Mark **"**No smoking sign" at work field, keep away from any spark and sources of ignition, prevent the vapor release into to work field, well prepared with equipment for fire fighting and leakage treatment.

Storage conditions Mark the container with " keep cover well", store in cool, dry with adequate ventilation and prevent sunlight. Keep away from sources of ignition, well prepared with equipment for fire fighting and leakage treatment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering control: Close room should has ventilation system.

Control factors:

Hazardous Ingredients	CAS NO.	Exposure Limits			LC_{50}	LD_{50}
		TWA	STEL	Ceiling		
C025	-	-	-	-	100,000ppm/4H	10,00mg/Kg
Ethyl Acetate	00141-78-6	400ppm	500ppm	-	16,000ppm/6H	5,600mg/Kg
Toluene	00108-88-3	100ppm (skin)	125ppm (skin)	-	6,000ppm/6H	< 870mg/Kg

Personal protection equipment

Respirators protection organic vapor filter
Hands protection butyl rubber, PVC, PU gloves
Eyes protection chemical safety goggles
Skin and body protection safety shoes, shower

Hygiene practices: no eating, drinking, smoking in work filed, wash hands after handling, keep work field clean.

LC_{50}: (rat, inhalation)

LD_{50}: (rat, ingestion)

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Yellowish viscous liquid

Odor Irritating, sweet

Specific gravity (water=1) 0.900 – 1.000 (20℃)

Boiling point (at 760mmHg) > 100℃

Solubility in water (% by wt.) none

Vapor pressure (at 20℃) 32.2 mm/Hg (20℃)

Vapor density (air=1) **3.09**

pH value --

Decomposition temp. **–**

Flashing point 4.4 ℃ (close cup) -

Explosion Limited UEL : 7.98 % LEL : 1.36 %

10. STABILITY AND REACTIVITY

Stability Stable

Possible hazards under special condition -

Conditions to avoid -

Material to avoid Oxidizers(Nitrate, Perchlorate …) will increase the danger of fire and explosion, Strong Acids (Sulfur Acid ...) will cause decomposition and release heat, 3° potassium Butyrate will cause ignition.

Hazardous decomposition products Alcohol, CO_2, CO

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: Inhalation: vapor will irritate the nose, throat, and serious exposure will result rush breathing, headache, dizziness, and affect the central nervous system.

Skin: continuous contact will has irritation

Eyes: irritation

Ingestion: disgusting, vomiting, rush breathing, headache, dizziness and affect the central nervous system.

Partial Effect: Irritate to nose

Sensitisation: -

Chronic/Subchronic: Long exposure may effect the hearing system. Cause skin reddish. Chronic damage to the central nervous system, lose memory, not sleep well, lose concentration, lose balance and concord.

Special Effects: -

12. ECOLOGICAL INFORMATION

1. Non accumulative and Bio-degradable.
2. Not solvable with water, not easy to result water contamination.
3. The vapor of solvent will cause the air contamination.

13. DISPOSAL CONSIDERATIONS

Incinerate in a furnace or bury in a landfill where permitted under local government regulations.

14. TRANSPORT INFORMATION

International transportation Regulation: Follow this regulation

Domestic Transportation Regulation: Road and traffic safety regulation.

UN number : no regulation

Special Transportation and Notice: -

15. REGULATORY INFORMATION

labor safety and hygiene regulation, hazardous and toxicological materials regulation, poison organic solvent precaution regulation, labor work environment's hazards in air permitted concentration standard, road and traffic safety regulation, waste storage and disposal regulation.

16. OTHER INFORMATION

This information is made by our Tainan Plant.

The information contained in this safety data sheet is the result of the most up-to-data available in our company. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risk as required by other health and safety legislation. The user must ensure that the information is suitable and complete in relation to the specific use of the product

P.S: MSDS is dated 05.10.2017, there is no newer version and it will be valid furtheron. Only if there is any change in the delivered prematerial, it will have to be changed

測試報告
Test Report

號碼(No.): ETR24101064M01　　日期(Date): 30-Jan-2024　　

武誼實業有限公司 (WU EI CO., LTD.)
蘇州武誼貿易有限公司 (SUZHOU WUYI TRADES CO., LTD.)
台北市中正區和平西路二段140號1樓 (NO. 140, SEC. 2, HEPING W. RD., TAIPEI CITY 100, TAIWAN R. O. C.)
苏州市姑苏区络香路2号 (NO. 2 LUOXIANG ROAD, GUSU DISTRICT, SUZHOU CITY)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by the applicant as)：

樣品名稱(Sample Name)	:	COPPER FOIL TAPE (銅箔單面膠)
樣品型號(Style/Item No.)	:	WI-CXXX C251 C501 C25S C50S 銅箔單面膠

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收件日(Sample Receiving Date)	:	04-Jan-2024
測試期間(Testing Period)	:	04-Jan-2024 to 18-Jan-2024

測試需求(Test Requested) :
(1) 依據客戶指定，參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP。 (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)
(2) 其他測試項目請見下一頁。 (Please refer to next pages for the other item(s).)

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages.)

結　　論(Conclusion) :
(1) 根據客戶所選擇的部位測試，其鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP的測試結果符合RoHS 2011/65/EU Annex II暨其修訂指令(EU) 2015/863之限值要求。 (Based on the performed tests on selected part of submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)

Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

CHECK REPORT
PIN CODE: E17DC789

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測試報告
Test Report

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蘇州武誼貿易有限公司 (SUZHOU WUYI TRADES CO., LTD.)
台北市中正區和平西路二段140號1樓 (NO. 140, SEC. 2, HEPING W. RD., TAIPEI CITY 100, TAIWAN R. O. C.)
苏州市姑苏区络香路2号 (NO. 2 LUOXIANG ROAD, GUSU DISTRICT, SUZHOU CITY)

測試部位敘述 (Test Part Description)

No.1 : 銅色銅箔及其膠(不含離型紙) (COPPER COLORED COPPER FOIL WHITE ADHESIVE (EXCLUDING THE RELEASE PAPER))

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
鎘 (Cd) (Cadmium (Cd))	參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	100
鉛 (Pb) (Lead (Pb))	參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	1000
汞 (Hg) (Mercury (Hg))	參考IEC 62321-4: 2013+ AMD1: 2017，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	1000
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI))	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.	1000
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	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.	-
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.	1000

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蘇州武誼貿易有限公司 (SUZHOU WUYI TRADES CO., LTD.)
台北市中正區和平西路二段140號1樓 (NO. 140, SEC. 2, HEPING W. RD., TAIPEI CITY 100, TAIWAN R. O. C.)
苏州市姑苏区络香路2号 (NO. 2 LUOXIANG ROAD, GUSU DISTRICT, SUZHOU CITY)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	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.	-
多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	-	n.d.	1000
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.	-
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)		mg/kg	50	n.d.	-
鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.	-
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二正己酯 (DNHP) (Di-n-hexyl phthalate (DNHP)) (CAS No.: 84-75-3)		mg/kg	50	n.d.	-
鄰苯二甲酸二正庚酯 (Di-n-heptyl phthalate) (CAS No.: 3648-21-3)		mg/kg	50	n.d.	-
鄰苯二甲酸雙(2-甲氧基乙基)酯 (DMEP) (Bis(2-methoxyethyl) phthalate (DMEP)) (CAS No.: 117-82-8)		mg/kg	50	n.d.	-

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測試報告
Test Report

武誼實業有限公司 (WU EI CO., LTD.)
蘇州武誼貿易有限公司 (SUZHOU WUYI TRADES CO., LTD.)
台北市中正區和平西路二段140號1樓 (NO. 140, SEC. 2, HEPING W. RD., TAIPEI CITY 100, TAIWAN R. O. C.)
苏州市姑苏区络香路2号 (NO. 2 LUOXIANG ROAD, GUSU DISTRICT, SUZHOU CITY)

備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出) ; 小於MDL / Less than MDL
4. "-" = Not Regulated (無規格值)
5. 除非另有說明，參照ILAC-G8:09/2019，採用簡單二元(w=0)允收規則進行符合性判定；根據此規則，符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)
6. 本報告為 ETR24101064 之異動報告。(This is the additional test report of ETR24101064.)

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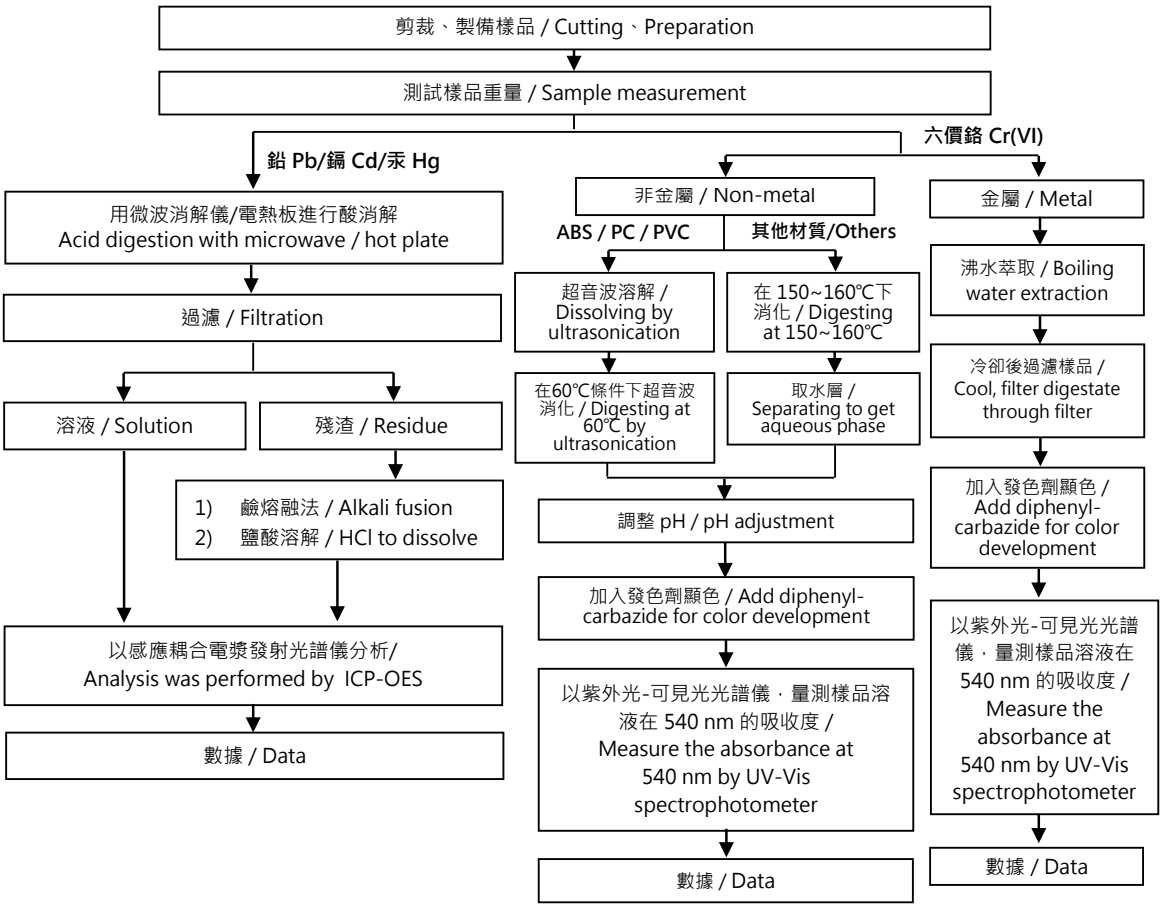
重金屬流程圖 / Analytical flow chart of heavy metal

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）



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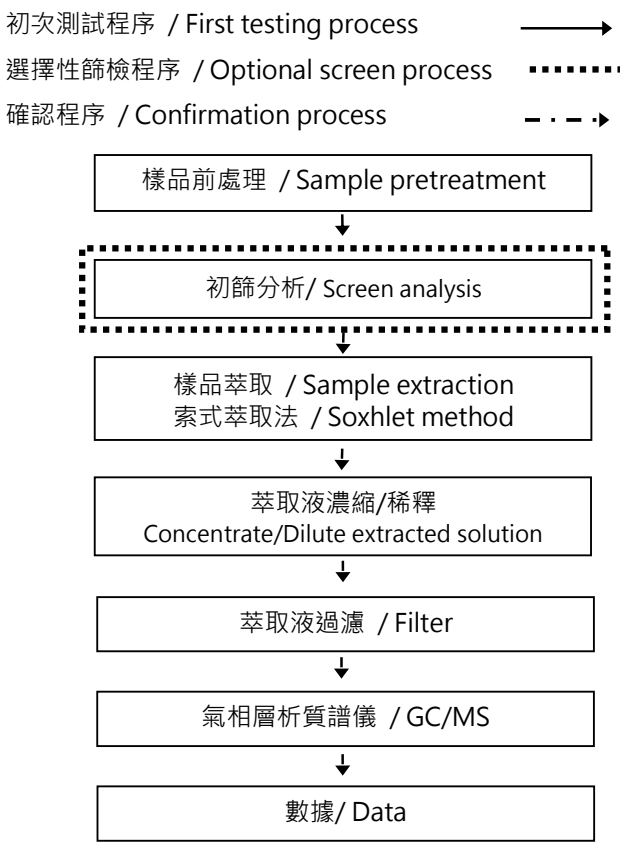
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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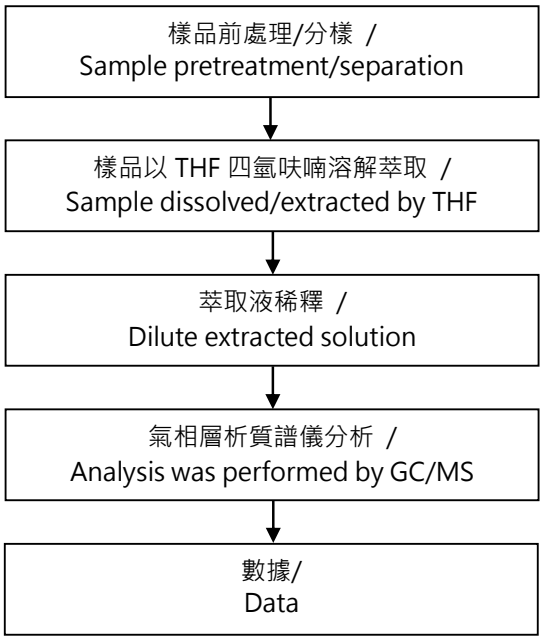
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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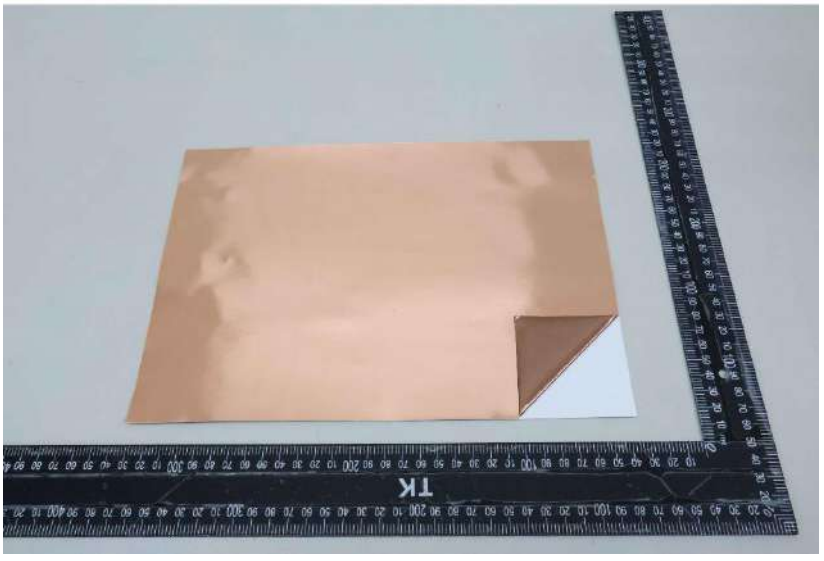
*** 照片中如有箭頭標示，則表示為實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

ETR24101064



** 報告結尾 (End of Report) **

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