



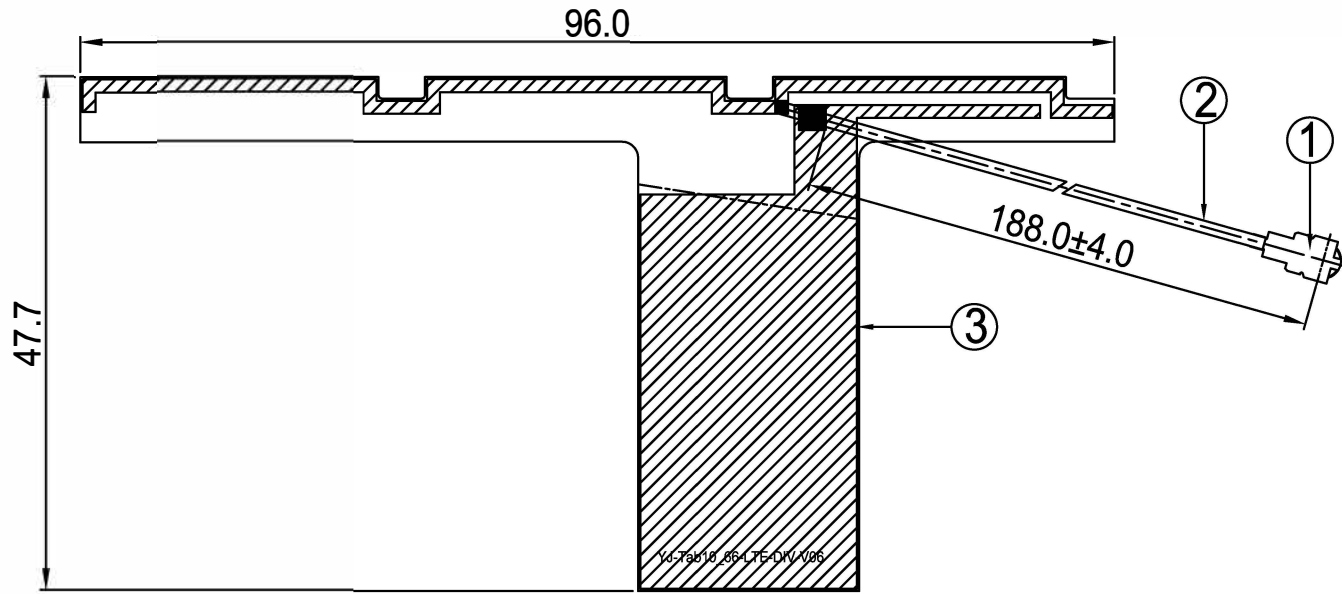
# 承认书项目表

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10	N/A	N/A	N/A
11	-	-	-
12	-	-	-
13	-	-	-

**RoHS**  
Compatible

CUSTOMER	
PART NO	

REV.	DESCRIPTION	DATE
△A	首次发行	2021-11-15
△B	修改FPC	2021-12-27
△C	修改线长	2022-01-06
△D	修改FPC	2022-06-28



3	FPC	96.0*47.7mm	FPC	FPC11XXA.P01	1
2	Coaxial Cable	O.D.1.13 Gray	O.D.1.13	COA100XXA.P01	1
1	Mini Connector	Au Plated 1代	Cu	TER100XXA.P01	1
NO	PART NAME	DESCRIPTION	Material	Part Number	Q.TY

PART NAME: LTE/DIV Antenna L=188mm MHF				
PART NO.: YJS01.042.021.303A			DATE: 2022-06-28	
APPROVED BY	CHECKED BY	DESIGNED BY	 UNITS: mm SCALE: 1/1 REVISION: D	Tolerance X.X ±0.50 X.XX±0.15 X° ±3°
陈国强	周琪	廖光喜		



# 天线规格

## Antenna Specification

### Electrical Properties

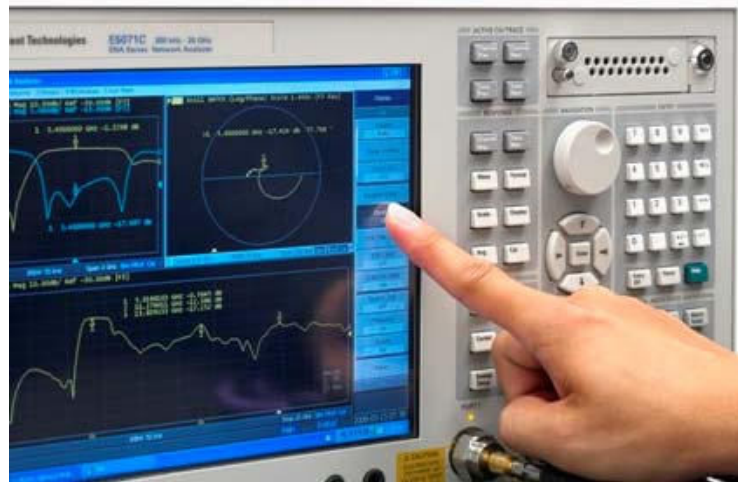
Frequency	700-900MHz 1710-2180MHz
Impedance	50 Ohm Nominal
V.S.W.R	5.0 Max@700-900MHz 2.5 Max@1710-2180MHz
Gain	1.9 dBi@700-900MHz 4.1 dBi@1710-2180MHz
Radiation	Omni-directional
Polarization	Linear

### Physical Properties

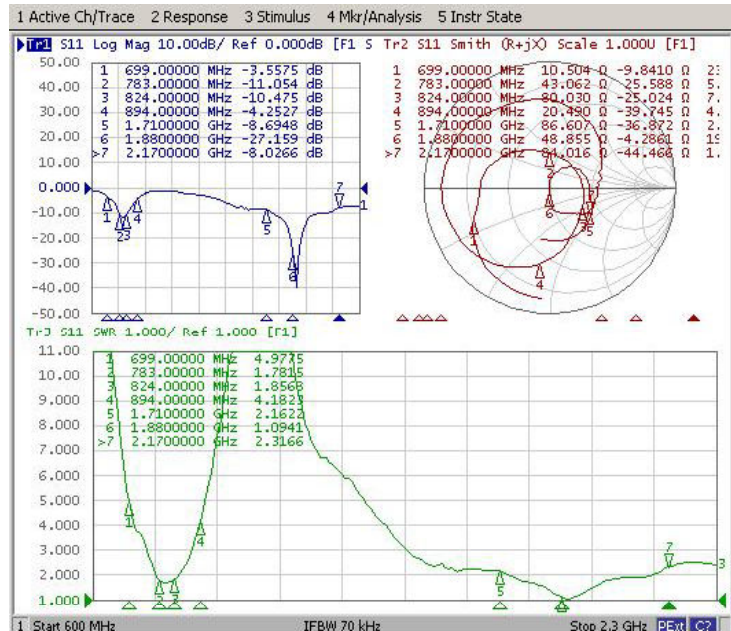
Connector	1代IPEX
Cable Type	O.D.1.13mm
Cable Length	188mm
Cable Color	Gray
Operating Temp.	-40 ~ +85 °C
Storage Temp / Humidity	25±5°C / <70%



# Agilent 71B



# S Parameter Test // LT div Antenna





assive Test or LTE div Antenna			
req (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
700	16.1	-7.9	1.7
710	17.5	-7.6	1.2
720	18.8	-7.3	1.0
730	19.3	-7.1	0.7
740	21.9	-6.6	0.7
750	22.0	-6.6	0.5
760	22.8	-6.4	0.2
770	24.8	-6.1	0.1
780	25.6	-5.9	0.3
790	29.7	-5.3	0.7
800	30.3	-5.2	1.0
810	34.8	-4.6	1.9
820	32.1	-4.9	1.7
830	30.5	-5.2	1.2
840	29.2	-5.4	1.0
850	29.1	-5.4	0.7
860	26.2	-5.8	0.5
870	25.8	-5.9	0.2
880	21.1	-6.8	0.2
890	20.9	-6.8	0.3
900	16.5	-7.8	0.7



assive Test r LTE div Antenna			
req (MHz)	ffi (%)	ffi (dB)	Gain (dBi)
1700	29.4	-5.3	0.8
1740	32.6	-4.9	2.4
1780	28.1	-5.5	-0.1
1820	29.4	-5.3	0.4
1860	35.3	-4.5	1.4
1900	40.4	-3.9	2.9
1940	44.7	-3.5	4.1
1980	40.2	-4.0	3.0
2020	37.3	-4.3	2.7
2060	37.2	-4.3	2.1
2100	35.5	-4.5	3.9
2140	32.0	-5.0	1.0
2180	24.6	-6.1	-0.2

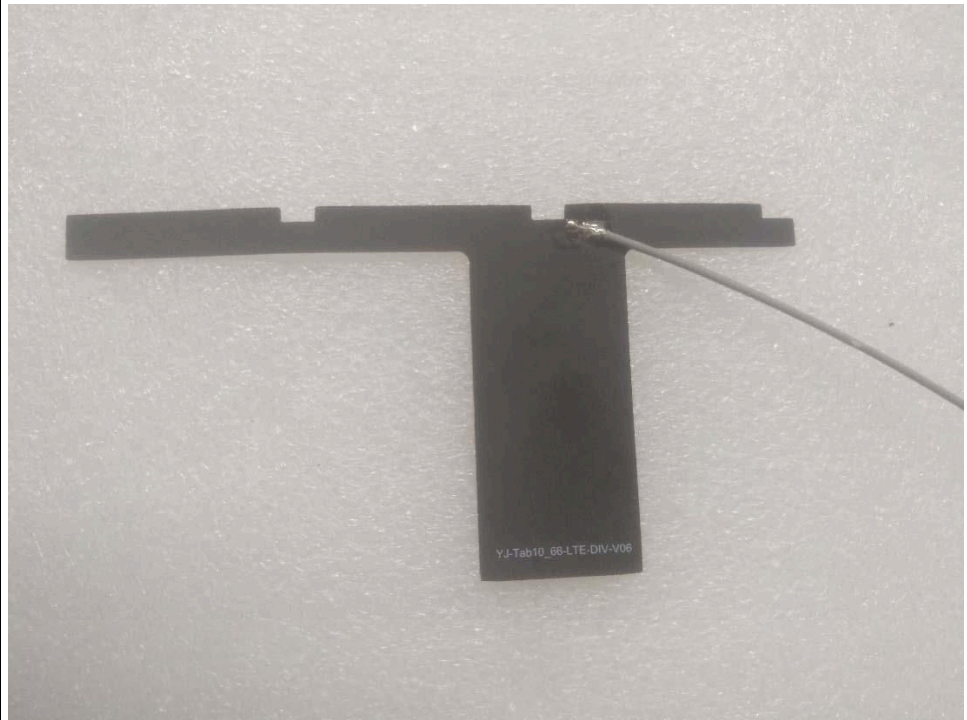


*Device*





***TE***  
***div***  
***An enna***





**M r S f y D Sh**

**ITEM : PSM-800@ /SMH-800**

Identity (Trade Name As Used on Label)

**SECTION 1 IDENTIFICATION**

Manufacturer

**UNIRES CHEMICAL INDUSTRIAL CO.,LTD.**

Address

**22CHING CHIAN 4<sup>th</sup>RD.KUANYIN INDUSTRIAL**

**DISTRICT TAOYUAN HSIEN TAIWAN**

Phone Number (For Information)

886-3-4836651 (fax)886-3-4837487

Emergency Phone Number

Telex \* **886-3-4836651**

MSDS Number\* **0110701AAA**

CAS Number\*

**07/01/2011**

Data Prepared

**HUANG CHIN HUAI**

Prepared By\*

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

**SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS**

INGREDIENTS	CAS No.	CONTENTS(%)	OSHA (PEL)	ACGIH (TLV)
Heavy aromatic naphtha(petroleum)	6474 -94-5	<1 %	N.D.	N.D.
Epoxy-Acrylic derivative	Trade secret	<48%	N.D.	N.D.
Barium sulfate	77 7-43-7	< 0%	15mg/m3	10mg/m3
Silica, amorphous, fused	7631-86-9	<8%	N.D.	10mg/m3
Dipropylene glycol methyl ether	34590-94-8	<1 %	100ppm	100ppm

**SECTION 3 HAZARDS IDENTIFICATION**

INHALATION : Highly concentrated vapor irritates nose, throat and lungs. May cause headache and dizziness.

EYE CONTACT : Slight irritation

SKIN CONTACT : Slight irritation

INGESTION : Harmful, if swallowed.

**SECTION 4 FIRST AID MEASURES**

SKIN CONTACT : Wash with plenty of water using a soap. Do not use organic solvents.

EYE CONTACT : Rinse immediately with clean water for at least 15 minutes. If irritation persists, seek medical attention

INHALATION : Immediately carry the victim to a place where fresh air is available. If irritation persists, treat with oxygen and seek medical attention.

INGESTION : Obtain medical advice immediately. It is not recommended that vomiting be induced except on medical advice

<b>S I 5</b>	<b>FIR -FIGH I G M ASUR S</b>
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SUITABLE EXTINGUISHING MEDIA : Carbon dioxide, foam, powder.  
 UNSUITABLE EXTINGUISHING MEDIA : water spray and water jet.  
 EXPOSURE HAZARDS : Burning may release oxides of carbon, nitrogen, sulfur and other toxic gases or vapors. Do not release chemically contaminated water into drains or surface waters, and soil according to local regulations.  
 PROTECTIVE EQUIPMENT : Use full protective clothing and self-contained breathing apparatus.  
 FIRE FIGHTERS MEASURES : promptly move transferable containers to another safety area. Check the speed of fire. Extinguish the fire with suitable extinguisher from the windward side

<b>S I 6</b>	<b>ADDITIONAL SAFETY</b>
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PERSONAL PRECAUTIONS : Avoid ignition sources. Avoid contact with skin, eyes and clothing. Avoid inhaling vapor.  
 ENVIRONMENTAL PRECAUTIONS : Prevent contamination of soil, drains and surface waters  
 METHODS FOR CLEANING : Scoop up or absorb into combustible material, wipe out a stain in use organic solvents. Dispose in accordance with local regulations.

<b>S I 7</b>	<b>HAZARDS</b>
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HANDLING : Handle with care. Avoid ignition sources. Ensure good ventilation and local exhaust. Do not smoke at the workplace  
 STORAGE : Store in the original sealed container at less than 0°C. Avoid direct exposure to UV and sunlight.

<b>S I 8</b>	<b>EXPOSURE LIMITS/RESPIRATORY PROTECTION</b>
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People who know they are chemically sensitive, should avoid contact with this product.  
 TECHNICAL PROTECTIVE MEASURES : no special safety measures required.  
 EXPOSURE CONTROL LIMITS : (see PEL and TLV values shown in shown in section )  
 RESPIRATORY PROTECTION : Wear suitable mask to avoid inhalation of vapor.  
 HAND PROTECTION : wear chemical resistant gloves.  
 EYE PROTECTION : wear safety glasses.  
 SKIN PROTECTION : wear suitable protective working cloths.

<b>S I 9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>
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BOILING	: *156°C(760mmHg)	COLOR	: <b>black</b>
FLASH	: 75.0°C	FORM	: Paste
VAPOR PRESSURE	: * .00mmHg(40°C)	VAPOR DENSITY	: *6.08(Air=1)
SOLUBILITY IN WATER	: * <10.7wt%	ODOR	: Mild odor
		SPECIFIC GRAVITY	: 1.18

\*Data of the organic solvents or monomers contained in this product is product is quoted.

**S I 10 STABILITY**

STABILITY : Stable  
CONDITIONS TO AVOID : Heat and sunlight.  
MATERIALS TO AVOID : Strong acids, strong bases, peroxides and strong oxidizing agents.  
HAZARDOUS DECOMPOSITION PRODUCTS : Burning may release oxides of carbon, nitrogen, sulfur and other toxic gases or vapors.

**S I 11 XI LIQUIDFORMA I**

PRIMARY ROUTE(S) OF ENTRY  
 DERMAL  INHALATION  INGESTION  
TOXICITY STUDIES : Toxicity studies have not been carried out in this product. Toxicity information available for the ingredients listed in section is given below.

HEALTH HAZARDS  
ACUTE INGESTION TOXICITY : N.E.  
ACUTE SKIN IRRITATION : Slightly irritant  
MUTAGENICITY : NONE

CARCINOGENICITY  
 NTP  IARC  OSHA  NOT LISTED

SYMPTOMS OF OVER EXPOSURE  
INHALATION : Slight irritation to respiratory tract. Highly concentrated vapor may cause headaches, and nausea.  
EYES : Slight irritation  
SKIN : Slight irritation  
INGESTION : Expected to have low order of toxicity.

**S V I 12 LIQUIDFORMA I**

ACUTE FISH TOXICITY : Ecological data are not available  
BIODEGRADABILITY : No data available.

**S V I 13 DISPOSALSIDRA I S**

Incineration or landfill in accordance with local regulations.

**S V I 14 RASPERIFORMA I**

ADR : Inflammable liquid  
IMDG-CODE : Free  
IATA : Free  
US DOT : Combustible liquid

U  
ASH POINT

r  
75.0°C

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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EEC LABELING

Harmful

RISK PHRASES

Harmful may cause lung damage if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SAFETY PHRASES

Avoid contact with skin.

Do not breathe vapor.

If swallowed, do not induce vomiting. Seek medical advice immediately and show this container or label.

Avoid release to the environment. Refer to special instructions/Safety data sheets.

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of view of safety requirements. It should not be construed as guaranteeing specific properties.


It may not be valid for this material, if used in combination with any other materials.

# Material safety data sheet

Article and manufacturer information

Item name: KTM- 50F WM
Other name: NONE
Recommended use: heat hardening pigment
Name of manufacturer or supplier: supplier - keyway Technology Co., Ltd Manufacturer - kaiya Technology Co., Ltd Address of manufacturer or supplier: supplier - No. 8, Lane 646, Bai street, Zhubei City, Xizhu County Factory - No. 8, Lane 646, Bai street, Zhubei City, Xizhu County
Emergency contact: (03) 555- 822 Fax: (03) 553- 338

## Hazard identification

Hazard classification: flammable liquid, fire hazard Category 3, acute toxicity category 5.
Label content: flammable mixed solvent

Symbols: warning:
Hazard warning message: flammable substances, may be harmful if inhaled.
Hazard prevention measures: tightly cover the container; keep away from the ignition source - no smoking; place the container in a well ventilated place; take off the clothes as soon as they are polluted; wear eye mask / face shield; do not eat or drink when using, and avoid release to the environment
Other hazards:

## Component identification

INGREDIENTS	% by Wt	CAS No.
Polyester resin (polymer)	20~25%	28064-14-4
Mixed solvent	20~25 %	106-65-0 ; 1119-40-0 ; 627-93-0
Titanium dioxide	30~35%	13463-67-7
Filler	10~15 %	14807-96-6
Hexamethylene diisocyanate refers to oligomer	5~10 %	21093-51-6
Butyl acetate	1~5 %	627-93-0

## First aid measures

First aid methods of different exposure routes:
Inhalation: 1. remove the patient to fresh air immediately. It can only cause nose irritation and may be harmful to people. Skin contact: 1. Immediately wash with water.
Eye contact: 1. Immediately open the eyelids and wash them with mild water.
Ingestion:
Most important symptoms:
Protection for first aid personnel: wear protective gloves to avoid contact with pollutants.
Tips for doctors:

## Fire fighting measures

Suitable extinguishing agent: dry powder

Special hazards that may be encountered during fire fighting:

Special fire fighting procedures: 1. Remove the container from the fire site and put out the fire in the upwind.

2. Stop leakage without endangering personnel safety.

3. If the leakage cannot be stopped and the surrounding area is empty, the fire will burn out.

Special protective equipment for firefighters: Firefighters must wear air breathing apparatus, fire clothing and protective gloves.

## Leakage treatment method

Personal precautions: 1. Restrict personnel access until the overflow area is completely clean.

2. It is determined that the trained personnel are responsible for the cleaning work.

3. Wear appropriate personal protective equipment.

Environmental precautions:

1. Ventilate the area.

2. Extinguish or remove all sources of ignition.

3. Report to relevant units of safety, health and environmental protection of the government.

Cleaning method: 1. Do not touch the leakage. 2. Avoid discharging into sewer or other confined space. 3. Try to prevent or reduce the leakage under the condition of safety permission. 4. Use sand, soil or other absorbing substances that do not react with leakage substances to enclose the leakage. 5. In case of a small amount of leakage, absorb it with absorbent that will not react with the leakage. Contaminated absorbents and spills are equally hazardous and should be placed in properly capped and labeled containers. Flush the spill area with water. 6. In case of a large number of spills, contact the fire department, emergency treatment unit and supplier for assistance.

## Safe handling and storage methods:

Without special measures, it is not inflammable and explosive.

Storage: no corrosive container, no reactivity, low flammability, non flammable.

## Exposure precautions

Engineering control: local exhaust device or integral air exchange device.

Control parameters: eight hour daily average allowable concentration / short time

average allowable concentration / maximum allowable concentration:

Personal protective equipment: respiratory protection:

Hand protection: impervious gloves, butyl rubber recommended, Teflon, 4h, barricale, chemrel

Eye protection: 1. Goggles (minimum 8 inches). 2. splash proof safety goggles. 3. Do not wear contact lenses. Skin and body protection: chemical protective clothing.

## Physical and chemical properties

Material state: viscous paste liquid shape: paste liquid

Color: smell: Fragrance

PH value: slightly acidic boiling point / melting point range: OC /---

Decomposition temperature: flash point not measured:

Test method: open cup and close cup

Autoignition temperature: explosion limit: LEL: uel:

Vapor pressure: vapor density: > 1 (air 1)/

Specific gravity: 1.2 ~ 1.4 (25 / 25 °C) for water solubility:

Stability and reactivity

stability: chemical stability  
Possible hazards and special conditions:  
Critical values:  
Best case behavior: acids.  
Hazardous components:

### Toxicity data

Exposure route: skin contact, eye contact, ingestion  
Symptoms: eye damage  
Acute toxicity: inhalation:  
Skin: causes mild irritation. Eyes: cause mild irritation. Ingestion:  
LD50 (test animal, absorption pathway) local effect:---  
Sensitization:---  
Chronic toxicity or long-term toxicity:  
Special effect:.

### Ecological data

Ecotoxicity:  
Degradability and stability:  
Bioaccumulation:  
Mobility in soil:  
Other adverse effects:

### Waste disposal method

Waste disposal method:  
1. Handle according to the relevant laws and regulations.  
Classification: highly polluting waste.

### Delivery information

UN No:  
UN transport Name:  
Transportation hazard classification:  
Packing category:  
Marine pollutants (yes / no):  
Special delivery methods and precautions:-

### Other information

References: None  
Prepared by: Kaiya Technology Co., Ltd. / No. 18, Lane 646, Boai Street, Zhubei City, Xizhou County / Tel: 03-5551822 / Fax: 03-5531338  
Prepared by: Xie Jiqiang  
Prepared date: August 15, 2014  
Note: The above information and data are for reference only. The user shall determine the feasibility of the application according to the actual requirements.

# MATERIAL SAFETY DATA SHEET

## 产品安全资料

Section1 Preparation Identification and Company 样品标公司

Preparation Identification 标记: 防氧化原液DX-808HT

Manufacturers Name 公司名称: 深圳市东方星化工科技有限公司

Manufacturers Address 地址: 东莞市虎门镇大宁村大板地工业区

Emergency Telephone Number 联系电话: 0769-85015502

Emergency Tex Number 传真: 0769-85015500

Postal code 邮政编码: 523900

Section 2 Composition information on Ingredients

成份组成

学名

化学文摘社登记号码

浓度(%)

(Chemical Name)

(CASNO)

(Concentration)

苯并咪唑 Benzimidazole

95-14-7

1%

甲酸 Formic acid

64-18-6

3%

添加剂 Additives

-----

0.05%

DI 水DI water

7732-18-5

95.95%

Section 3 Hazards Identification

危险性概述

Safety and Risk 安全和危险性: DX-808HT contain formic acid which may cause severe burns. 含有甲酸可能导致灼伤

Section 4 First Aid Measures

急救措施

Eyes 眼睛: flush with plenty of clean, cool water for 15 minutes and get immediate medical attention 大量清水冲洗并尽快就医

Skin 皮肤: flush with plenty of clean, cool water for 15 minutes 大量清水冲洗15 分钟

Ingestion 食入: get immediate medical attention 尽快就医

Section 5 Fire Fighting Measures

消防措施

不可燃

Section 6 Accidental Release Measures

泄漏应急措施

Personal Precautions 个人防护: wears protective clothing, chemical safety goggles, respirator, face shield and rubber gloves 穿戴耐酸防护服, 护目镜、面罩和橡胶手套

Clean-up Procedure 清洗: flush with plenty of clean, cool water 用大量清水冲洗

Section 7 Handling and Storage

操作与储存

Ventilation 通风: Store indoors in a cool dry area

阴凉干燥处

Temperature 温度: Store indoors in a cool dry area

阴凉干燥处

Containers 容器: Keep containers tightly closed。Loosen closure cautiously when opening。保持容器密封, 打开时慎重

Incompatible Materials 不相容物质: alkalis and oxidizers 碱性和氧化物

Pot Life 有效期: six months 6 个月

Section8 Exposure Controls /Personal Protection 接触控制与个人防护

Ventilation 通风: Exhaust ventilation is recommended 推荐抽出式通风



**Respiration 呼吸:** respirator。Avoid breathing vapors or mist。防毒面具  
避免吸入蒸汽或烟雾

**Eyes and Face 眼睛和脸:** chemical safety goggles and face shield 护目镜  
和脸罩

**Hands and Skin 手和皮肤:** rubber gloves 橡胶手套

**Clothing :** protective clothing 耐酸防护服

Section 9 Physical and Chemical Properties 物理和化学特性

**Appearance 外观:** 浅蓝色液体

**Odour 气味:** 淡醋酸味

**PH:** 2.7±0.3

Section 10: Stability and Reactivity 稳定性和反应活性

**Chemical Stability 化学稳定性:** 弱的反应能力

**Incompatible Materials 不相容物质:** alkalis and oxidizers 碱性和氧化物

Section 11 Toxicological Information 毒性资料

NDA 无毒

Section 12 Disposal Consideration 废弃处理

Dispose of material in approved sites 中和后过滤排放，过滤物交当地合法  
批准单位。

Section 13 生态资料

生态毒性: 无

生物降解性: 无

非生物降解性: 无

其它有害作用: 无

Section 14 法规信息

通用法规:

劳工安全卫生规则

特定化学物预防标准

Section 15 运送资料

国内运输规定: 依道路交通安全规则第84 条

Section 16 其他资料

制表单位: 深圳市东方星化工科技有限公司

制表地址: 东莞市虎门镇大宁村大板地工业区

制表部门: 品质部

制表日期: 2017 年 1 月



## Article Information Sheet

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This product is defined as an article based on the definition of an Article under China New Chemical Environmental Management Method MEP Decree No. 7, and does not require a Safety Data Sheet under Dangerous Chemical Safety Management Regulatory China State Council Decree No. 591 and China GB/T16483-2008 Safety Data Sheet for Chemical Products Content and Order of Sections. This article information sheet (AIS) is provided as a courtesy in response to a customer request. When used as recommended or under ordinary conditions, the product should not present a health and safety hazard. However, use or processing of the product not in accordance with the product's recommendations or not under ordinary conditions may affect the performance of the product and may present potential health and safety hazards.

<b>Document Group:</b>	07-7168-3	<b>Version Number:</b>	1.00
<b>Issue Date:</b>	2015/05/19	<b>Supercedes Date:</b>	Initial Issue

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ 300LSE Adhesive Transfer Tapes: 8132LE, 8153LE, 9453FL, 9453LE, 9471FL, 9471LE, 9472FL, 9472LE, 9472LEU, 9653LE, 9671LE, 9672LE and 9698LE

Other means of identification

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Bonding & Attachment, Industrial use

#### 1.3. Supplier's details

**Company:** 3M Company  
**Division:** Industrial Adhesives and Tapes Division  
**ADDRESS:** 3M Center, St. Paul, MN 55144, USA  
**Phone:** 021-22105335  
**FAX:** 021-22105036  
**E Mail:** Tox.cn@mmm.com  
**Website:** www.3m.com.cn

#### 1.4. Emergency telephone number

021-22105335

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

This product is considered to be an article and is exempt from GHS classification.

3M™ 300LSE Adhesive Transfer Tapes: 8132LE, 8153LE, 9453FL, 9453LE, 9471FL, 9471LE, 9472FL, 9472LE, 9472LEU, 9653LE, 9671LE, 9672LE and 9698LE

### SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Paper or Film Liner	Mixture	Not Applicable
Acrylic Polymer Adhesive	Trade Secret	100

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**Inhalation:**

No need for first aid is anticipated.

**Skin Contact:**

No need for first aid is anticipated.

**Eye Contact:**

No need for first aid is anticipated.

**If Swallowed:**

No need for first aid is anticipated.

### SECTION 5: Fire-fighting measures

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

#### 6.2. Environmental precautions

Not applicable.

#### 6.3. Methods and material for containment and cleaning up

Not applicable.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

#### 7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

### SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical

3M™ 300LSE Adhesive Transfer Tapes: 8132LE, 8153LE, 9453FL, 9453LE, 9471FL, 9471LE, 9472FL, 9472LE, 9472LEU, 9653LE, 9671LE, 9672LE and 9698LE

under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	Solid
Specific Physical Form:	Roll of Tape
Appearance/Odor	Translucent adhesive, slight acrylate odor, paper or film quick release liner
Odor threshold	<i>Not Applicable</i>
pH	<i>Not Applicable</i>
Melting point/Freezing point	<i>No Data Available</i>
Boiling point/Initial boiling point/Boiling range	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Density	<i>Not Applicable</i>
Relative Density	<i>Not Applicable</i>
Water solubility	Nil
Solubility- non-water	<i>Not Applicable</i>
Autoignition temperature	<i>Not Applicable</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	<i>Not Applicable</i>
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>

## SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

## SECTION 11: Toxicological information

### Inhalation:

This product may have a characteristic odor; however, no adverse health effects are anticipated.

### Skin Contact:

No health effects are expected

### Eye Contact:

No health effects are expected

### Ingestion:

No health effects are expected

### Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use

**3M™ 300LSE Adhesive Transfer Tapes: 8132LE, 8153LE, 9453FL, 9453LE, 9471FL, 9471LE, 9472FL, 9472LE, 9472LEU, 9653LE, 9671LE, 9672LE and 9698LE**

may affect the performance of the product and may present potential health and safety hazards.

## **SECTION 12: Ecological information**

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

## **SECTION 13: Disposal considerations**

Dispose of contents/container in accordance with the local/regional/national/international regulations.

## **SECTION 14: Transport Information**

Not hazardous for transportation.

## **SECTION 15: Regulatory information**

### **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

This product is an article and is exempted from Measures on Environmental Management of New Chemical Substances and from IECSC inventory listing requirements.

## **SECTION 16: Other information**

### **References**

United Nations 'Recommendations on the Transport of Dangerous Goods - Model Regulations'

United Nations 'Globally Harmonized System of Classification and Labelling of Chemicals (GHS)'

### **Revision information:**

Conversion to AIS.

**DISCLAIMER:** The information on this Article Information Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Information Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

**3M People's Republic of China AISs are available at [www.3m.com.cn](http://www.3m.com.cn)**

4. MSDS

**江阴凯博通信科技有限公司**  
**JIANGYIN KAIBO COMMUNICATION TECHNOLOGY CO., LTD.**  
**Material Safety Data Sheet (物质安全资料表)**

一、 物品与厂商资料

物品名称: 同轴高频线

物品编号: KB113 系列

制造商或供货商名称、地址: 江阴市凯博通信科技有限公司/江苏省江阴市澄江镇梅园大街 391 号

紧急联络电话/传真电话: 0510-86070001/86070020

二、 成分辨识资料

纯物质:

中英文名称: 聚全氟乙丙烯 FLUORINATED PROPYLENE ETHYLENE/镀银铜线 Cu-silver plated/镀锡线 TINNED COPPER

同义名称: FEP/SC/TX

有害物质成分(成分百分比) : 无

危害物质:

危害物质	浓度或浓度范围 (单位: ppm)	
铅及其化合物 Pb	≤90	
镉及其化合物 Cd	≤75	
汞及其化合物 Hg	≤1000	
六价铬及化合物	≤1000	
卤素	氯 Cl ≤900	氯 Cl+溴 Br ≤1500
	溴 Br ≤900	
SVHC15 种物质	禁止使用	

三、 危害辨识数据

最 重 要 危 害 效 应	健康危害效应: 在 260°C 以上, 可能会有吸入分解气体的危险. 一定要安装排气装置.
	环境影响: 要按废弃物处理及清扫法律法规处理, 绝对不可燃烧.
	物理性及化学性危害: 物理化学性能及其稳定, 不易降解, 不得擅自填埋.
	特殊危害: 无
主要症状: 对人的神经系统产生损害	
物品危害分类: 大气和水源	

四、 急救措施

不同暴露途径之急救方法:
· 吸入: 到空气流通处换气.
· 皮肤接触: 无
· 眼睛接触: 无
· 食入: 不消化, 排出.

最重要症状及危害效应：无
对急救人员之防护：对流换气
对医师之提示：吸氧

#### 五、灭火措施

适用灭火剂：通用
灭火时可能遭遇之特殊危害：避免分解气体吸入
特殊灭火程序：无
消防人员之特殊防护设备：防毒面罩

#### 六、泄漏处理方法

个人应注意事项：粉状树脂
环境注意事项：不可填埋
清理方法：要按废弃物处理及清扫法律法规处理，绝对不可燃烧。

#### 七、安全处置与储存方法

处置：避免与高温和火源接触。
储存：通风干燥处。

#### 八、暴露预防措施

工程控制：无
控制参数： · 八小时日时量平均容许浓度/短时间时量平均容许浓度/最高容许浓度： · 生物指标：
个人防护设备： · 呼吸防护：安装排气装置 · 手部防护：无 · 眼睛防护：无 · 皮肤及身体防护：无
卫生措施：应将衣服上附着的灰尘抖落，手脸洗净，不要让其附着于香烟上。

#### 九、物理及化学性质

物质状态：固体	形状：透明颗粒
颜色：透明	气味：无
pH 值：7	沸点/沸点范围：/
分解温度：360°C	闪火点：/
自燃温度：/	爆炸界限：/
蒸气压：/	蒸气密度：/
密度：2.2	溶解度：/

#### 十、安定性及反应性

安定性：很稳定
特殊状况下可能之危害反应：高温或燃烧分解气体对人体神经系统的损害。
应避免之状况：绝对不可燃烧。

应避免之物质：金属钠及其强酸的混合物。  
危害分解物：气体及粉尘。

十一、毒性资料

急毒性：/  
局部效应：/  
致敏感性：/  
慢毒性或长期毒性：/  
特殊效应：/

十二、生态资料

可能之环境影响/环境流布：不降解, 禁填埋

十三、废弃处置方法

废弃处置方法：按废弃物处理及清扫法律法规要求送专业资质处理公司处置。

十四、运送资料

国际运送规定：/  
联合国编号：/  
国内运送规定：无  
特殊运送方法及注意事项：无

十五、法规资料

适用法规：遵循欧盟 REACH 法规相关要求。

十六、其它数据

参考文献	杜邦产品说明/SONY 限用物资标准
制窗体位	名称：江阴凯博通信科技有限公司
	地址/电话：江阴市澄江街道梅园大街 391 号/0510-86070017
制表人	姓名(签章)：庄科洁
制表日期	2011/11/3



# MATERIAL SAFETY DATA SHEET (MSDS)

Issued: Dec 20, 2007

Revised: Dec 20, 2007

File No. 2302

## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

CHEMICAL PRODUCT NAME : DURANEX XFR4840  
NAME OF COMPANY : WinTech Polymer Ltd.  
SECTION IN CHARGE : Quality Assurance Dept.  
ADDRESS : 2-18-1 Konan, Minato-ku, Tokyo, 108-8280 Japan  
TELEPHONE NUMBER : 03-6711-8605  
FACSIMILE NUMBER : 03-6711-8616

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE/PREPARATION : Preparation RATION  
COMMON CHEMICAL NAME : Polybutyleneterephthalate  
SYNONYMS : Polybutyleneterephthalate(PBT)  
INGREDIENTS AND COMPOSITION : PBT  $\geq$  80%, Phosphorus Flame retardant and others  $\leq$  20%  
CHEMICAL FORMULA :  $\{ \text{C}_6\text{H}_4\text{C}_2\text{H}_4\text{O}_2 \}_n$   
SERIAL No IN OFFICIAL GAZETTE : 7-1039 (base resin)  
(Law Concerning Examination and Regulation of Manufacture, etc., of Chemical Substances)  
CAS No : 2 4 9 6 8 - 1 2 - 5 (base resin)

## 3. HAZARDS IDENTIFICATION

PHYSICAL AND CHEMICAL HAZARDS : Not applicable  
HUMAN HEALTH EFFECTS : Not applicable  
ENVIRONMENTAL EFFECTS : Not applicable  
PHYSICAL AND CHEMICAL HAZARDS : It is inflammable substance and combustible if an igniting source is existent. Neither dangerous reaction, fire nor explosion can be caused under normal conditions.  
THE CLASSIFICATION : Not applicable

## 4. FIRST-AID MEASURES

INGESTION : Help to vomit as much as possible. If sick feeling continues, and ask a physician for advice.  
INHALATION : When a gas generated from the molten polymer, especially fume generated during combustion or heat, has been inhaled, remove fresh air without delay and wait until the victim is recovered. If sick feeling continues, ask a physician for advice.  
SKIN CONTACT : Cool the contacted skin with clean water without delay, if a contact with the polymer in a molten form. Do not force to remove the solid resin on the skin. If any burns are observed on the skin, ask a physician for advice.

EYE CONTACT : Cool and rinse the eye with clean water for at least 15 minutes when the eyes had contact with molten polymer. In case of wearing contact lenses,remove the lenses as soon as possible,and ask a physician for advice. When the eye had contact with the polymer in an ordinary solid form,rinse the eye with clean water without delay. If the discomfort persists,ask a physician for advice.

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#### 5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA : Water,form fire-extinguishing agent,powder fire-extinguishing agent,and carbon dioxide gas.

SPECIFIC METHODS : Extinguish the fire with water. A method of extinguishing an ordinary fire may be applied. Do not apply water directly to processing machines.

SPECIFIC HAZARDS : Incomplete combustion leads to generation of toxic gases such as carbon monoxide or tetrahydrofuran,in addition to carbonic acid gas and water.

SPECIAL EQUIPMENT FOR THE PROTECTION OF FIREFIGHTERS : In case the fire gained force,use a gas mask or other protective equipment.

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#### 6. ACCIDENTAL LEAKAGE MEASURES

PERSONAL PRECAUTIONS : When pellets were spilled on the road or floor,wipe them off with a besom or cleaner not to cause slipping.

ENVIRONMENTAL PRECAUTION : Handle the spillage in accordance with provisions given in the "Resin pellet spillage preventive manual",in order to prevent intakes by marine animals and birds.

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#### 7. HANDLING AND STORAGE

HANDLING : This resin in a pellet form will neither ignite nor explode at room temperatures.

HANDLING 2 : For molding work,effective means for local exhaust are required to discharge gases generated by melt processing.

HANDLING 3 : Avoid inhaling of gases generated in moulding work. Do not directly touch resin of high temperature.

HANDLING 4 : Avoid retaining hot resin in the processing machines for many hours.

HANDLING 5 : This pellets spilled on the floor are likely to cause slipping. Remove such spillage at any times.

STORAGE : Keep the substance away from any fire or heat sources for the sake of safe storage.

RECOMMENDED PACKAGING MATERIALS : No information.

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#### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

CONTROL CONCENTRATION : None at present

PERMISSIBLE CONCENTRATION : OSHA PEL/1985  
Max. permissible concentration of inactive powder 15mg/m<sup>3</sup>  
- ditto - (Aspiration ) 5 mg/m<sup>3</sup>  
ACGIH TLV/1992 1993  
Exposure limit of the powder TWA 10 mg/m<sup>3</sup>

ENGINEERING MEASURE : When handling dust: Use totally enclosed containers resisting dust explosion.  
When heat melted in molding: Effective local ventilation must be provided.

PERSONAL PROTECTIVE EQUIPMENT	:	
RESPIRATORY PROTECTION	:	Wear a dust-proof mask.
EYE PROTECTION	:	Wear protective glasses or goggles.
HAND PROTECTION	:	Wear heat-resisting gloves against burns, when handling molten polymer.
SKIN & BODY PROTECTION	:	Wear long sleeve clothes against burns, when handling molten polymer.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE etc.	:	Pellet
BOILING POINT	:	Not applicable
VAPOUR PRESSURE	:	Not applicable
VOLATILITY	:	Not applicable
SUBLIMATION	:	None
MELTING POINT	:	228°C
DENSITY	:	1.32g/cm <sup>3</sup>
SOLUBILITY	:	Insoluble in water
FLASH POINT	:	300°C or higher
IGNITION POINT	:	300°C or higher
EXPLOSION PROPERTY	:	Not applicable
INFLAMMABILITY	:	None
REACTIVITY WITH WATER	:	None
OXIDIZABILITY	:	None
SELF-REACTIVITY	:	None
DUST EXPLOSIVENESS	:	Upper explosion limit : Not applicable. Lower explosion limit : 35g/m <sup>3</sup>

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## 10. STABILITY AND REACTIVITY

STABILITY AND REACTIVITY	:	Stable for normal storage or handling.
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## 11. TOXICOLOGICAL INFORMATION

SKIN CORROSIVE PROPERTIES	:	No finding.
SENSITIZING & IRRITANT EFFECTS	:	Gas generated in drying or melting is irritating eyes and skins.
ACUTE TOXICITY (INCLUDING LD50)	:	No finding.
SUBACUTE TOXICITY	:	No finding.
CHRONIC TOXICITY	:	No finding.

CARCINOGENECITY : No finding.

MUTAGENECITY(Mi : No finding.  
cro  
organisms,chromoso  
mal aberration)

REPRODUCTIVE : No finding.  
TOXICITY

TERATOGENICITY : No finding.

OTHERS(Including : No finding in this report means that there will be no hazard in  
generation of general,but no proving data available at the time of reporting.  
hazardous gases by  
reaction with  
water,for ezample)

OTHER CAUTIONS : With regard to dust,the maximum permissible concentration and limits  
are fixed by OSHA and ACGIH.

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#### 12. ECOLOGICAL INFORMATION

BIODEGRADABILITY : No finding.

BIOACCUMULATION : No finding.

FISH TOXICITY : No finding.

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#### 13. DISPOSAL CONSIDERATION

WASTE FROM : This is designated as waste plastics among industrial wastes by the  
RESIDUES Wastes Disposal Law. Disposal waste pellets through licensed wastes  
handlers or local autonomous bodies if they are handling wastes  
disposal.

WASTE FROM : When disposed by incineration,use the well controlled incinerators in  
RESIDUES 2 accordance with the Wastes Disposal Law,Air Pollution Control Law and  
Water Pollution Prevention Law.

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#### 14. TRANSPORT CONSIDERATION

UN : Not applicable  
CLASSIFICATION  
NUMBER

OTHER CAUSIONS : Handle with care so as not to give damages to containers or not to be  
subjected to wetting.

OTHER CAUSIONS : Secure the containers firmly so as not to cause collapsing.  
2

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#### 15. REGULATORY INFORMATION

WASTE DISPOSAL : Waste plastics among industrial wastes.  
LAW

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#### 16. OTHER INFORMATION

HANDLING OF THE : This MSDS is the English version translated from the Japanese MSDS  
DETAILS GIVEN which is prepared for domestic use.  
ABOVE Details given above are based on references, information and data  
available at this moment, but no warranty can be made on exactness of  
these details. They are also prepared on the assumption that the  
product will be handled in a normal way. For special handling, adequate  
safety and environmental measures should be taken in respect to its  
applications. Our products are not specifically intended for implants for  
medical and dental applications, and therefore they are not  
recommended for such applications.  
"No finding" in this report means that there will be no hazard in general,  
but no proving data is available at the time of reporting.

**MATERIAL SAFETY DATA SHEET**

MSDS FILE No. (KURAMI WORKS) : 05-1225

(based on Form OSHA-174)

IDENTITY ( AS Used on Label and List )

Product Class : Phosphor Bronze Strip  
 Trade Name : JIS H3130 C5210R (Equivalent to ASTM B103 C52100)  
 CAS No. : Copper: 7440-50-8, Tin: 7440-31-5, Phosphor: 7723-14-0  
 Chemical Composition

	Content(wt-%)	CAS No.
Tin(Sn)	7.0~9.0	7440-31-5
Phosphor(P)	0.03~0.35	7723-14-0
Copper(Cu)	Balance	7440-50-8
Sn+P+Cu	99.7≤	-

**Section I**

Manufacturer's Name NIKKO METAL MANUFACTURING CO., LTD. KURAMI WORKS	Date Prepared May 24th, 2005
Address 3 Kurami Samukawa-cho Kouza-gun Kanagawa prefecture 253-0101 JAPAN	Signature of Person in Charge <i>Chihiro Izumi</i> IZUMI, Chihiro Senior Technical Supervisor, Quality Assurance
	Signature of Person Responsible <i>Hiroaki Watanabe</i> WATANABE, Hiroaki Manager, Quality Assurance Section
Telephone Number for Information (Quality Assurance) +81-467-75-7285	
Facsimile Number for Information (Quality Assurance) +81-467-74-6971	

**Section II Hazardous Ingredients / Identity Information**

Hazardous Components (Specific Chemical Identity : Names OSHA PeI ACGIH TLV

Nothing for ordinary service condition

**Section III Physical / Chemical Characteristics**

Boiling Point	2630 °C for Copper 2275 °C for Tin	Specific Gravity (H20 = 1 )	8.80
Vapor Pressure (mmHg)	N/A	Melting Point	1025 deg. centi. for C5210 Phosphor Bronze
Vapor Density (Air = 1 )	N/A	Evaporation Rate (Butyl Acetate = 1 )	N/A
Solubility in Water	N/A		
Appearance and Odor	Brown - Red (solid) : Odor - None		

**Section IV Fire and Explosion Hazard Data**

Flash Point (Method Used )	N/A	Flammable Limits	N/A	LEL	N/A	UEL	N/A
Extinguishing Media	N/A ( stable , nonflammable substance )						
Special Fire Fighting Procedures	Not specified						
Unusual Fire and Explosion Hazards	Metal products do not present fire or explosion hazards under normal conditions.						

**Section V Reactivity Data**

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid)

Nothing

Hazardous Decomposition or Byproducts

Nothing

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

**Section VI Health Hazard Data**

Route(s) of Entry :	Inhalation ?	Skin ?	Ingestion ?
	N/A	N/A	N/A

Health Hazardous (Acute and Chronic)

N/A

Garcinogenicity :	NTP ?	IARC Monographs ?	OSHA Regulated ?
	N/A	N/A	N/A

Signs and Symptoms of Exposure

N/A

Medical Conditions

Generally Aggravated by Exposure

N/A

Emergency and First Aid Procedures

N/A

**Section VII Precautions for State Handling and Use**

Steps to Be Taken in Case Material Is Released or Spilled

N/A

Waste Disposal Method

Collect scrap for remelting.

Precautions to Be Taken in Handling and storing

**For Handling**

- Put safety gloves on to protect your hands from edges of coils which might cut your hands.
- Wear safety glasses when metal powders or chips are expected to be generated in the work.
- Put safety shoes on when handling heavy coils.

**For Storing**

- The environment of stocking area should be free from acid, alkali, chloride, sulfide and other corrosive chemicals to prevent from rusting or corrosion.

Other Precautions

No special requirements

**Section VIII Control Measures**

Respiratory Protection (Specify Type)

- Wearing a mask be recommended in the work such as abrasion and buffing which generates metal powders or chips.

Ventilation	Local Exhaust	Special
	Mechanical (General)	Other
	None	None
	None	None

Protective Gloves

- Put safety gloves on to protect your hands from edges of coils which might cut your hands.

Eye Protection

- Wear safety glasses when metal powder is expected to be generated in the work.

Other Protective Clothing or Equipment

- Put safety shoes on when handling heavy coils.

Work / Hygienic Practices

None

Influence to environments

Fish on toxicity : TLm 48 hr. on CuSO<sub>4</sub>  
 Salmogairdeneri : 0.038 ~ 0.8 ppm  
 Oryzias Latipes : 2.1 ~ 24ppm

# Material Safety Data Sheet

## 1. Manufacturer

- Company HARADA Metal Industry Co., Ltd.
- Address 10-18 Sasamekitamati, Toda, Saitama 335-0033, Japan  
TEL 048-422-1588  
FAX 048-449-6303
- Counter The domestic business department business primary and second section  
TEL 048-441-5115  
FAX 048-444-9104  
The domestic business department OSAKA service office  
TEL 06-531-8094  
FAX 06-531-8096  
The domestic business department NAGOYA service office  
TEL 052-821-9778  
FAX 052-822-7500  
The overseas business department export section  
TEL 048-441-5115  
FAX 048-444-9104
- Urgent place to contact  
The quality assurance department  
TEL 048-422-1588  
FAX 048-449-6303

## 2. Products

- Phosphor bronze plates and strips for springs
- Phosphor bronze plates and strips

### 3. Specification of the material

- The division of mixture or single product : Single product
- The chemical name : Copper alloy
- Chemical composition and content rate( wt.%)

Element	Percent					CAS No.
	C5210	C5212	C5191	C5102	C5111	
Copper	rem.	rem.	rem.	rem.	rem.	7440-50-8
Tin	7.0~9.0	7.0~9.0	5.5~7.0	4.5~5.5	3.5~4.5	7440-31-5
Phosphorus	0.03~0.35	0.03~0.35	0.03~0.35	0.03~0.35	0.03~0.35	7723-14-0
Lead	0.05 max	0.05 max	0.05 max	0.05 max	0.05 max	7439-92-1
Iron	0.1 max	0.1 max	0.1 max	0.1 max	0.1 max	7439-89-6
Zinc	0.2 max	0.2 max	0.2 max	0.2 max	0.2 max	7440-66-6

### 4. Classification of harmfulness

- The name of classification : Not classified into the dangerous harmfulness material.
- The danger : No knowledge
- The harmfulness : No knowledge
- The effect for the environment : No knowledge

### 5. First aid

- Eyes : Flush the water. Consult the doctor, when the simulation of the eye continues.
- Skin : Flush the water.
- Inhalation : Consult the doctor, when it was large inhaled.

### 6. The treatment in the fire

- Nonflammable.

### 7. Leakage

- Not applied (because of solid)

### 8. Attention in handling and storage

- Stored at the ordinary—temperature and usual humidity.
- Prohibition of the rapid temperature and humidity change.



9. Treatment on the exposure prevention

- Standard control concentration : Not regulated.
- Allowable temperature : Not regulated.
- Facility countermeasure : The whole ventilation is desirable.
- Protector : For lung ,the wear of protection mask is desirable for the power handling.  
For hand ,the wear of protective glove is desirable.  
For eyes ,the wear of safety goggles is desirable for the power handling.  
For body , the wear of protective clothing is desirable.

10. Physical and chemical characteristic

- Appearance and smell : The solid with the metallic luster. Odoless.
- Boiling point : The indistinctness.
- Solubility : Dissolves in the inorganic acid.

	C5210	C5212	C5191	C5102	C5111
Specific gravity	8.82	8.82	8.85	8.88	8.90
Melting point	1020°C	1020°C	1045°C	1050°C	1060°C

11. Information for danger

- Fire point : The indistinctness.
- Stability : Show the stability at room temperature and in the air.
- The situation to be avoided : —

12. Information for harmfulness

- The powder stimulates eyes , skin and bronchi.
- Produce the ulcer and the hepatic disorder rarely.

13. Information for environment

- No knowledge.

14. Attention for scrapping

- Possible to deal with ,as an industrial waste.

15. Attention for transportation

- No damage transportation is desirable.

16. Applying act

- —