

## Lead Free Solder Wire Sn99.3Cu0.7

- 1) Specification
- 2) Technical Datasheet
- 3) Material Safety Datasheet



## 1. Apply range

This acknowledgment is only fit for our company.

## 2. Specification and chemistry component

Specification	Sn99.3-Cu0.7								
Appearance	Lucent, no dirt on surface								
Weight	Net: about 10kg/box								
Chemistry component									
Sn	Cu	Pb	Sb	Bi	Zn	Fe	Al	As	Cd
Rem	0.7±0.2	<0.1	<0.1	<0.1	<0.001	<0.02	<0.001	<0.03	<0.002

## 3. Alloy component and physical characteristic

Alloy component	Melting point	Density g/cm <sup>3</sup>	Rigidity HB	Conduct heat M.S.K	Extend Mpa	Extend rate %	Conductivity %
Sn99.3Cu0.7	227	7.4	9	64	32	48	16.0

# Technical Data Sheet

## 1. SnCu and SnPb capability balance

Component ( wt%)		Sn/Cu0.7			Sn63/Pb37		
Melting ( °C )		227			183		
Density ( 25 °C )		7.4			8.4		
Heat cubage ( J/kg · k )		220			176		
Conduct heat ( J/m · s · K )		64			50		
Extend intension (MPa)		32			44		
Extend Rate ( % )		48			25		
Resistance Rate ( $\mu\Omega\text{m}$ )		0.13			0.17		
Extend Rate ( % )	230 °C				91		
	240 °C	77			92		
	250 °C	77			93		
	260 °C	77			93		
	280 °C	78					
Wetness Balance Test		Ta	Tb	Fmax	Ta	Tb	Fmax.
	240°C	1.00	4.53	0.159	0.12	0.80	0.195
	250°C	0.86	2.79	0.181	0.11	0.64	0.200
	260°C	0.47	1.46	0.186	0.10	0.41	0.206
	270°C	0.31	0.80	0.192	0.07	0.32	0.211

# Material Safety Data Sheet

## 1. Product and Company Identification

Product Name: Lead-free solder wire
Product Code: JF-01
Manufacturer or supplier: Shenzhen Jufeng Solder Co., Ltd .
Add: 12#, Jinpeng Industry Area, Bantian, Longgang, Shenzhen 518129, China
Tel/Fax: 86-0755-89501348 89501587 89501292

## 2. Composition, Information on Ingredients

Chemical character: Medal solder material			
Foe component	Chroma or range	Classification according to 67/548/EECc	CAS No.
Tin, Sn	99.1-99.5%	No.9 -other	CAS: 7440-31-5
Copper, Cu	0.5-0.9%	No.9-other	CAS: 7440-50-8
Rosin	<3%	R43	CAS: 8050-09-7

## 3. Hazard Identification

### 3.1. Classification of the substance or mixture

**Classification according to 67/548/EEC or 1999/45/EC**

R42/43

#### R-phrases

42/43 May cause sensitization by inhalation and skin contact

#### Hazard statements for health hazards

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### Precautionary Statements

#### Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P285 In case of inadequate ventilation wear respiratory protection.

#### Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P341 IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

#### Storage

P403 + P235 Store in a well-ventilated place. Keep cool.



## Supplemental Hazard information (EU)

### Health properties

Repeated exposure may cause skin dryness or cracking.

### 3.3. Other hazards

#### Adverse physicochemical effects

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

#### Adverse human health effects and symptoms

Prolonged/repetitive skin contact may cause skin defatting or dermatitis.

May cause sensitization in susceptible people.

Inhalation of dust may cause irritation of the respiratory system.

#### Other adverse effects

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

Process vapours can irritate airways, skin and eyes.

#### Information pertaining to special dangers for human and environment

Harmful by inhalation, in contact with skin and if swallowed.

## 4. First Aid Measures

### 4.1. Description of first aid measures

#### General information

Remove contaminated soaked clothing immediately.

In case of allergic reactions, specially at respiratory tract, seek medical treatment immediately.

#### After inhalation

Remove the casualty into fresh air and keep him immobile.

If intensive inhalation of fumes seek medical treatment immediately.

#### After skin contact

In case of contact with skin wash off immediately with plenty of water.

Consult a doctor if skin irritation persists.

#### After eye contact:

In case of contact with eyes rinse with plenty of water carefully. In the event of persistent symptoms seek medical treatment

#### After ingestion:

Rinse out mouth and give plenty of water to drink.

Induce vomiting if patient is conscious, seek medical advice.

### 4.2. Most important symptoms and effects, both acute and delayed

No information available.

### 4.3. Indication of any immediate medical attention and special treatment needed

No information available

## **5. Fire Fighting Measures**

### **5.1 Suitable Extinguishing Media:**

Fire-extinguishing activities according to surrounding.

Foam

Dry fire-extinguishing substance

Dry powder

Carbon dioxide

sand.

### **Unsuitable extinguishing media**

water

### **5.2. Special hazards arising from the substance or mixture**

In case of fire formation of dangerous gases possible.

Carbon monoxide (CO)

Carbon dioxide (CO<sub>2</sub>)

### **5.3. Advice for firefighters**

Special protective equipment for fire-fighters

Fire-fighting operations, rescue and clearing work under effect of combustion and smoulder gases just may be done with breathing apparatus.

Do not inhale explosion and/or combustion gases.

### **Additional information**

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

## **6. Accidental Release Measures**

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

Use personal protective clothing.

Use breathing apparatus if exposed to vapours/dust/aerosol.

Pay attention to extension of gas especially at ground (heavier than air) and in direction of the wind.

### **6.2. Environmental precautions**

Do not discharge into the drains or bodies of water..

Do not discharge into the drains/surface waters/groundwater.

Do not discharge into the subsoil/soil.

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

Send in suitable containers for recovery or disposal.

Additional Information

Information for safe handling see chapter 7.

Information for personal protective equipment see chapter 8.

Information for disposal see chapter 13.

#### 6.4. Reference to other sections

No information available.

### 7. Handling and Storage

#### 7.1. Precautions for safe handling

Advice on safe handling

Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation

at workplace.

Use only in well-ventilated areas.

General protective measures

Avoid contact with eyes and skin

Do not inhale gases/vapours/aerosols.

Hygiene measures

At work do not eat, drink, smoke or take drugs.

Keep separated from food and feed.

Wash hands and skin before breaks and after work.

Advice on protection against fire and explosion

The product is not combustible.

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

Requirements for storage rooms and vessels

Ventilate store-rooms thoroughly.

Keep only in original container.

Advice on storage compatibility

Do not store together with food.

Store at cool and aired place and at distance to acids and alkalies.

Further information on storage conditions

Store at cool and aired place.

Information on storage stability

Storage time: 12 months.

### 8. Exposure Controls, Personal Protection

Engineering Measures: No

Control Parameters:

Average admit chroma in eight hours every day(TWA)/Average admit chroma in short time(STEL)/Highest admit chroma(CEILING):

#### CAS: 7440-31-5 TIN (Sn)

PEL Long-term value: 2 mg/m<sup>3</sup>

metal

REL Long-term value: 2 mg/m<sup>3</sup>

TLV Long-term value: 2 mg/m<sup>3</sup>

metal

#### CAS: 7440-50-8 COPPER (Cu)

PEL Long-term value: 1\* 0.1\*\* mg/m<sup>3</sup>

as Cu \*dusts and mists \*\*fume

REL Long-term value: 1\* 0.1\*\* mg/m<sup>3</sup>

as Cu \*dusts and mists \*\*fume

TLV Long-term value: 1\* 0.2\*\* mg/m<sup>3</sup>

\*dusts and mists; \*\*fume; as Cu

**Additional information:**

PEL = Permissible Exposure Limit (OSHA)

TLV= Threshold Limit Value (ACGIH)

OSHA= Occupational Safety and Health Administration

ACGIH= American Conference of Governmental Industrial Hygienists

**Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

**Breathing equipment:**

Not necessary if room is well-ventilated.

Use suitable respiratory protective device in case of insufficient ventilation.

**Protection of hands:**

Protective gloves

**Material of gloves:**

Nitrile rubber, NBR

Natural rubber, NR

**Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:**

Safety glasses

**9. Physical and Chemical Properties**

State of Substance: Metal linear	Appearance: Linear
Color: Silver-gray metal solid	Odor: Monotony
pH Value: Not applicable	Boiling Point: Not applicable
Decomposing Temperature: Not applicable	Flashpoint : Not applicable °F Not fit for °C Test: Not applicable Test Methods: Open Slot Closed Slot
Self-Igniting Temperature: Not applicable	Explosion Limits: Not applicable
Vapor Pressure (20°C): < 0.1 mbar	Vapor Density (20°C): 6
Density: 7.4g/cm <sup>3</sup>	Dissolution: insolubler

**10. Stability and Reactivity**

**10.1. Reactivity**

No further relevant information available

**10.2. Chemical Stability**

No information available

**10.3. Possible Hazard Reaction Under Special Conditions**

No further relevant information available

**10.4. Conditions to Avoid**

Heat, blaze, phlogiston and incompatibility matter.

**10.5. Materials to Avoid**

Halogen and trioxide, Copper nitrate, Peroxide-Na and Kalium, Sulfur and some acid. Reactions with acids and strong oxidising agents.

**10.6. Hazardous Decomposition Products**

Carbon monoxide and carbon dioxide, Toxic metal compounds, Irritant gases/vapours

**11. Toxicological Information**

Acute Toxicity: No

Local Reactions: No

On the skin: no Irritant effect

On the eye: irritating effect

Sensitivity: Sensitization possible through inhalation

Chronic or Long Term Toxicity: No

Special Reactions: No information to check

Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

**Carcinogenic categories****IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

**NTP (National Toxicology Program)**

None of the ingredients is listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**12. Ecological information****Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Additional ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

Possible Environmental Impact/Environmental Run-offs:

Water poisoning: No

Moving, biology pile: No

**13. Disposal considerations****Waste treatment methods****Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

**Uncleaned packagings**

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

Packaging that cannot be cleaned should be disposed of like the product.

**Recommendation**

Collect waste separated in suitable, labeled and lockable containers.

Remove in accordance with local official regulations.

**14. Transport information****UN-Number**

**DOT, ADR, ADN, IMDG, IATA** Not applicable

**UN proper shipping name**

**DOT, ADR, ADN, IMDG, IATA** Not applicable

**Transport hazard class(es)**

**DOT, ADR, ADN, IMDG, IATA**

**Class** Not applicable

**Packing group**

**DOT, IMDG, IATA** Not applicable

**Special precautions for user** Not applicable.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**UN "Model Regulation":** Not applicable

**15. Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture**

All ingredients are listed on the following Government Inventories:

China: Inventory of Existing Chemical Substances in China (IECSC)

Korea: Korea Existing Chemicals List (ECL)

Europe: European Inventory of Existing Commercial Chemical Substances (EINECS)

Japan: Inventory of Existing and New Chemical Substances (ENCS)

Philippines: Philippine Inventory of Chemicals and Chemical Substances (PICCS)

USA: TSCA (Toxic Substances Control Act) TSCA Inventory of Chemical Substances

USA The following information relates to product regulation specific to the USA.

**SARA (Superfund Amendments and Reauthorization Act)**

**Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

**Section 313 (Specific toxic chemical listings):**

CAS: 7440-50-8 COPPER (Cu)

**California Proposition 65**

**Chemicals known to cause cancer:**

None of the ingredients is listed.

**Chemicals known to cause reproductive toxicity:**

None of the ingredients is listed.

**Carcinogenic categories**

**EPA (Environmental Protection Agency)**

CAS: 7440-50-8 COPPER (Cu)

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

**CANADA:**

Workplace Hazardous Materials Identification (WHMIS):

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR) and the Safety Data Sheet (SDS) contains all of the information required by the CPR.

**GHS label elements** Not applicable

**Hazard pictograms** Not applicable

**Signal word** Not applicable

**Hazard statements** Not applicable

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

**16. Other information**

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products

should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.

Wording of the R/H-phrases specified in chapter 3 (not the classification of the mixture!)

R 43 May cause sensitisation by skin contact.

**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

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Ref. Document	AIR PRODUCTS MSDS, INTERNATIONAL MARITIME DANGEROUS GOODS CODE	
Department	Dept. Name: Shenzhen Jufeng Solder Co.,Ltd	
	Address/Tel.: 0755-89501348 89501292	
Lister	Title: Director of Quality Department	Name(Signature): Xu Qinglan
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