

1. IDENTIFICATION OF THE SUBSTANCE AND THE SUPPLIER

Product	: LEAD-FREE SOLDER		
identifier	SF-B□ ¹ □ ²	□ ¹ = 10,40,80	□ ² =03,04,06,08,10,12,16
Manufacturer	: TAIYO ELECTRIC IND.CO.,LTD.	Section	: Engineering department
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2.HAZARD IDENTIFICATION

<GHS classification>

Substances and mixtures, which in contact with water, emit flammable gases : Classification not possible

Corrosive to metals : Classification not possible

Acute toxicity(Oral) : Not classified

Acute toxicity(Dermal) : Not classified

Inhalation(Gases) : Not classified

Inhalation(Vapors) : Not classified

Inhalation(Dusts/Mists) : Not classified

Skin corrosion/Irritation : Not classified

Serious eye damage/eye irritation : Not classified

Sensitization(Respiratory) : Not classified

Sensitization(Skin) : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ systemic toxicity(Single exposure) : Not classified

Specific target organ systemic toxicity(Repeated exposure) : Category 1

Aspiration hazard : Classification not possible

Hazardous to the aquatic environment : Not classified

Acute hazard

Chronic hazard

< GHS label elements >



< Hazard Statement >

- Danger

< Hazard and toxicity information >

- Causes damage to organs through prolonged or repeated exposure

< Precautionary statement >

【Prevention】

- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.

【Response】

IF INHALED: : Remove person to fresh air and keep comfortable for breathing.

• IF ON SKIN (or hair): : Wash with plenty of soap and water.

• IF exposed or concerned: : Get medical advice/attention.

• IF YOU FEEL UNWELL. : Get medical advice/attention.

【Storage】

- Store in a container.

【Disposal】

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

3.COMPOSITION / INFORMATION ON INGREDIENTS

Classification of the chemical : Mixture
substance or/mixture

Chemical name or common name: Rosin cored solder

< Concentration or Concentration range >

Chemical name	Percent (wt%)	Chemical formula	Law Concerning the Examination and Regulation of Manufacturer etc. of Chemical Substances	CAS No.
Tin	95 - 97%	Sn	Not applicable	7440-31-5
Silver	0.2 - 0.4%	Ag	Not applicable	7440-22-4
Copper	0.5- 0.8%	Cu	Not applicable	7440-50-8
Rosin	2 - 4%	---	Not applicable	---

4.FIRST-AID MEASURES

IF INHALED : Remove person to fresh air and keep comfortable for breathing.

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

IF IN EYES : Rinse cautiously with water for several minutes. Get medical advice/attention.

IF SWALLOWED : Induce vomiting. Get medical advice/attention.

Most important effects and symptoms : None known

Protection for first-aid responders : None known

5. Fire Fighting Measures

Extinguishing Media	: Dry chemical, air foam, carbon dioxide (except water contained)
Unsuitable Extinguishing Media	: Do not use water if metal is molten
Specific firefighting measures	: Fire-fighting shall be conducted from the windward of the fire as much as possible Eliminate all ignition sources as soon as possible
Special protective equipment for fire fighter	: Fight from upwind. Wear respiratory protection to prevent inhaling gases.

6.ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Fight from upwind. Wear appropriate protective equipment (glasses, gloves, mask,)
Environmental precautions	Pay attention so that the product does not flow into the sewage or public water area.
Recovery methods and equipment, neutralization, containment and clean:	<ul style="list-style-type: none"> • After cooling the leakage, sweep it or absorb it with a vacuum cleaner. Collect and store in a suitable container. • Regarding handing after collection, see "13. DISPOSAL CONSIDERATIONS"
Prevention of Secondary Hazards	<ul style="list-style-type: none"> • Eliminate all ignition sources as soon as possible, and prepare extinguishing media

7.HANDLING AND STORAGE

【Handling】	
Appropriate engineering controls	: Do not handle with bare hands.
Local exhaust/Total ventilation	: Require the partial exhaust at the handling place in an indoor work place.
Precautions for safe handling	: Wear suitable protective items such as protective glasses and protective gloves.
【Storage】	
Appropriate engineering controls	: Store in a cool place.
Engineering measures	: Protect from sunlight. Store in a well-ventilated place. Keep cool.
Storage condition	
Hazardous substance by mixing	: Avoid contact with heat, strong acid, strong oxidizers.

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Facilities measures	: Require the partial exhaust at the handling place
Contol parameter	: Not established
Acceptable parameter	: ACGIH TWA 2009 (Tin) 2 (Silver) 0.1 (Copper) 0.2 unit= mg/m ³

:Japan society of occupational health 2009 (Tin) --- (Silver) 0.1 (Copper) 0.2 Unit=
mg/m³

Protective equipment

Respiratory	:Wear protective mask
Hands	:Wear protective gloves
Eyes	:Wear protective goggle
Skin and body	:Wear protective work clothing, protective apron and protective boots if needed
Sanitation	:Before eating, drinking and/or smoking, wash hands and gargle well after work.

9.PHYSICAL AND CHEMICAL PROPERTIES

Shape, color	:Metal wire
Odo	:None
PH	:Not applicable
Melting point / Freezing point	:217-221°C (melting point of metal)
Flammability	:Not applicability
Boiling point	:Not applicable
Flash point	:Not applicable
Fire spontaneous temperature	:Not applicable
Vapor pressure	:Not applicable
Vapor density (air=1)	:Not applicable
Specific gravity (Relative density)	:6.1 (20°C)
Solubility	:Insoluble

10.STABILITY AND REACTIVITY

Chemical stability	:Stable at ordinary storage.
Possibility of hazardous reactions	:Chemical reaction occurs with strong acid, strong oxidizer and the metal.
Conditions to avoid	:Avoid contact with heat, strong acid, strong oxidizers.
Incompatible materials	:Strong acid, strong oxidizers.
Hazardous decomposition products	:Not applicable

11.TOXICOLOGICAL INFORMATION

Acute toxicity	:None known
Skin corrosion/ Irritation	:None known
Serious eye damage/eye irritation	:None known
Respiratory sensitization	:None known
Skin sensitization	:None known
Mutagenicity (Germ cell mutagenicity)	:None known
Carcinogenicity	:None known
Reproductive toxicity	:None known
Specific target organ systemic toxicity	:None known
- Single exposure	
Specific target organ systemic toxicity	:May cause damage to lungs (Tin)
- Repeated exposure	
Inhalation respiratory organs toxicity	:None known

12.ECOLOGICAL INFORMATION

Ecotoxicology	: None known
Persistence /Degradability	: None known
Bio accumulative potential	: None known
Mobility in soil	: None known
Other adverse effects	: Because of many unknown items do not discard in general environment.

13.DISPOSAL CONSIDERATIONS

Dispose of contents/container in accordance with local/regional/national/international regulations
Metal composition can be recycled.

14.TRANSPORT INFORMATION

【international regulations】	
UN classification	: Not applicable to the criteria for classification.
UN Number	: Not applicable
UN proper shipping name	: Not applicable
Packing group	: Not applicable
Marine pollutant	: Not applicable
【Domestic regulations】 (JAPAN) : See “15.REGULATORY INFORMATION”	
Special precautions and conditions	: Load so that there will be no tumbling, dropping no damaging and securely conduct load collapse prevention.

15.REGULATORY INFORMATION

Follow all regulation in your country.	
Industrial Safety and Health Act in Japan	: Substances to be notified, Enforcement Order 18-2) #322 Tin and its compound : Substances to be notified, Enforcement Order 18-2) #137 Silver and its water-soluble compound : Substances to be notified, Enforcement Order 18-2) #379 Copper and its compound : Substances to be notified, Enforcement Order 18-2) #632 Rosin
Air Pollution Control Law in Japan	: Not applicable
Water Pollution Prevention Act in Japan	: Not applicable
Sewerage Law in Japan	: Enforcement order Article 9-4 -- Copper and its compound
Soil Contamination Countermeasures Act in Japan	: Not applicable
PRTR in Japan	: The Class I Designated Chemical Substance (#82 Silver) Average content rate 0.29%
Poisonous and Deleterious Substances Control Law in Japan	: Not applicable
RoHS in EU	: Compatible (There is no content exceeding the threshold)

16. Other information

The information herein is given in good faith, but not a warranty. Final determination of suitability any of material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards, which exist.