

# SAFETY DATA SHEET

The date of preparation      December 30,2016  
Revised date

## 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND THE SUPPLIER

Product identifier	ECO SOLDER BALL S #7097
Manufacturer	Senju Metal Industry Co., Ltd.
Address	Senju Hashido-cho 23, Adachi-ku, Tokyo, Japan
Department in charge	International Business Dept.
Telephone	+81-3-3888-5156
Facsimile	+81-3-3888-7127
Emergency phone number 1	-
Recommended use and restrictions on use	
General industrial products	
Supply form	Ball

## 2. HAZARD IDENTIFICATION

GHS classification	
Flammable liquids:	No classification
Acute toxicity	
Oral:	Not classified
Dermal:	Not classified
Inhalation(Gases):	No classification
Inhalation(Vapours):	No classification
Inhalation(Dusts/Mists):	Classification not possible
Skin corrosion/Irritation:	Not classified
Serious eye damage/eye irritation:	Not classified
Sensitization	
Respiratory:	Classification not possible
Skin:	Category 1
Germ cell mutagenicity:	Classification not possible
Carcinogenicity:	Not classified
Reproductive toxicity:	Classification not possible
Specific target organ toxicity (Single exposure):	Category2(respiratory system)
Specific target organ toxicity (Repeated exposure):	Category1(lungs),Category2(respiratory)
Hazardous to the aquatic environment	
Acute hazard:	Classification not possible
Long-term hazard:	Not classified
Hazardous to the Ozone layer:	Classification not possible

GHS label elements



**Danger**

Hazard Statement:

- May cause an allergic skin reaction
- May cause damage to organs(respiratory system)
- Cause damage to organs(lungs)through prolonged or repeated exposure
- May cause damage to organs(respiratory)through prolonged or repeated exposure

Precautionary statement:

«Prevention»

- Do not eat, drink or smoke when using this product.
- Contaminated work clothing should not be allowed out of the workspace.
- Wash hands thoroughly after handling.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear protective gloves.

«Response»

- Wash contaminated clothing before reuse.
- Get medical advice/attention, if you feel unwell.
- Specific measure is urgent.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation or rash occurs: Get medical advice/attention.
- IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

«Storage»

- Store locked up.

«Disposal»

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

Other hazards which do not result in classification by the GHS

Hazards:

Unknown

Environmental effects:

Unknown

Physical and chemical hazards:

Under normal handling, the risk of fire is low.

Important symptoms:

No information available

Summary of assumed emergency:

No information available

National or regional information:

Not applicable to the criteria for classification

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Classification of the chemical substance or/mixture:

Mixture

Chemical name or common name:

ECO SOLDER BALL S #7097

Chemical formula:

<Tin>

Sn

<Silver>

Ag

<Copper>

Cu

Concentration or concentration range:

Chemical name or common name	Abbreviation	Content(wt%)	CAS No
Tin	—	90 ~ 100%	7440-31-5
Silver	—	4.0%	7440-22-4
Copper	—	0.1 ~ 3%	7440-50-8

Impurities and stabilizing additives which contribute to the classification of GHS:

No information available

### 4. FIRST-AID MEASURES

IF INHALED:

Gargle sufficiently, and if it is irritating, receive the treatment of a doctor.

IF ON SKIN:

Wash the portion that came into contact with the product well by using soap.

IF IN EYES:

Wash with clean water for several minutes, and after washing thoroughly, in case the eyes are injured, or in case there is irritation, receive the treatment of a doctor as required.

IF SWALLOWED:

Wash inside of the mouth thoroughly with water, and receive the treatment of a doctor as required.

Most important effects and symptoms:

No information available

Protection for first-aid responders:

No information available

Note to physician:

No information available

### 5. FIRE-FIGHTING MEASURES

Extinguishing media:

Dry chemical or disaster preventive sand

Unsuitable extinguishing media:

Water

Specific hazards arising from the chemical if burning:

There is a risk of generation of irritating fume or toxic fume by fire.

Specific fire fighting measures:

Move mobile container immediately to safe place.

Spray water to the surrounding facilities and cool them.

Special protective equipment for fire fighter:

Depending on the situation, protective equipment such as chemical cartridge respirator for fire-fighting and protective clothing shall be worn.

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear protective gloves.

Environmental precautions:

Pay attention so that the product does not flow into the sewage or public water area.

Methods and materials for containment and cleaning up:

Sweep up the scattered product and recover into a suitable container.

Prevention of secondary disaster:

No information available

## 7. HANDLING AND STORAGE

Handling

Appropriate engineering controls:

Carry out equipment countermeasure and have on protective equipment following term of 「8. EXPOSURE CONTROL/PERSONAL PROTECTION」.

Local exhaust /Total ventilation:

Provide local ventilation or general ventilation following term of 「8. EXPOSURE CONTROL/PERSONAL PROTECTION」.

General precautions:

No information available

Precautions for safe handling:

See the disclaimer of "2. HAZARD IDENTIFICATION".

Storage

Appropriate engineering controls:

No information available

Appropriate storage conditions:

Avoid the following to prevent thermal storage and deterioration: (1) Direct sunlight, (2) High temperature and high humidity, and (3) Outdoor storage. Even when storing the product indoors, avoid places near incandescent lamps, mercury lamps, or other lighting equipment that will emit heat or strong ultraviolet rays. Carefully store the product and avoid piling them too high in order to prevent toppling.

Safe containers and packaging materials:

Appropriate containers and packaging materials

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls:

Install equipment to wash the hands and eyes nearby.

Handling place shall be well ventilated.

In case dust and fumes generate, install a local air exhauster.

Tolerable concentration:

Tin	2(metal)mg/m3	TWA	ACGIH
Tin	2(oxide, inorganic compounds)mg/m3	TWA	ACGIH
Tin	2(inorganic compounds)mg/m3	TWA	OSHA
Tin	2mg/m3	TWA	Taiwan
Tin	4mg/m3	STEL	Taiwan
Silver	0.01mg/m3	TWA	OSHA
Silver	0.01(dust, fume) mg/m3	TWA	Taiwan
Silver	0.03(dust, fume) mg/m3	STEL	Taiwan
Copper	1(dust, mist)mg/m3	TWA	OSHA
Copper	0.1(fume)mg/m3	TWA	OSHA
Copper	1(dust, mist)mg/m3	TWA	Taiwan
Copper	0.2(fume)mg/m3	TWA	Taiwan
Copper	2(dust, mist)mg/m3	STEL	Taiwan
Copper	0.6(fume)mg/m3	STEL	Taiwan

Personal protective equipment

Respiratory protection:

Use a protective mask as required.

Hand protective equipment:

Use protective gloves as required.

Eyes / Face Protection:

Wear protective glasses as required.

Skin and personal protective equipment:

Use work clothes and safety shoes as required.

Appropriate hygiene measures:

After work, wash hands well and gargle before smoking, eating, etc.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Shape: Solid (metal)  
 Colour: Silver-grey  
 Odour(Odour threshold): Odorless  
 pH: Not applicable

Melting point/Freezing point:

Product 217-229°C

Boiling point:

Tin 2507°C  
 Silver 2000°C  
 Copper 2324°C

Initial boiling point:

Not applicable

Boiling range:

Not applicable

Flash point:

Not applicable

Autogenous ignition temperature:

Not applicable

Flammability (solid, gas):

Not applicable

Lower flammability or explosive limits:

Not applicable

Upper flammability or explosive limits:

Not applicable

Vapor pressure:

Tin	1Pa(1224°C)
Copper	0.073Pa(1083°C)

Vapor density:

Not applicable

Evaporation rate:

Not applicable

Specific gravity (Relative density):

Product	7.4(Specific gravity)
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Solubility:

Not applicable

Partition coefficient; n-octanol/water:

Copper	-0.57
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Decomposition temperature:

Not applicable

Other information:

No information available

## 10. STABILITY AND REACTIVITY

Reactivity:

No information available

Chemical stability:

Stable at ordinary storage and handling conditions.

Possibility of hazardous reactions:

There is fear of reacting with strong acid or strong alkali.

Conditions to avoid:

Diffusion of dust

Incompatible materials:

Strong acid or strong alkali

Hazardous decomposition products:

No information available

## 11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Silver	>5000mg/kg	Oral rat (LD50)	HSDB
Silver	>2000mg/kg	Hypodermic rat (LD50)	HSDB

## Skin corrosion/Irritation:

No information available

## Serious eye damage/eye irritation:

Silver Causes eye irritation

## Respiratory sensitization/skin sensitization:

Silver May cause an allergic skin reaction

## Mutagenicity (Germ cell mutagenicity):

No information available

## Carcinogenicity:

No information available

## Reproductive toxicity:

No information available

## Specific target organ toxicity - Single exposure:

Silver	Causes damage to organ (respiratory system)
Copper	May cause respiratory irritation

## Specific target organ toxicity - Repeated exposure:

Tin	Causes damage to organ (lung) through prolonged or repeated exposure
Silver	Causes damage to organ (respiratory organs: inhalation) through prolonged or repeated exposure
Copper	Causes damage to organ (liver) through prolonged or repeated exposure

## Aspiration hazard:

No information available

## 12. ECOLOGICAL INFORMATION

## Ecotoxicity

## Fish:

Copper May cause long lasting harmful effects to aquatic life

## Crustacea:

Copper May cause long lasting harmful effects to aquatic life

## Algae:

No information available

## Persistence/Degradability:

No information available

## Bioaccumulative Potential:

No information available

## Mobility in soil:

No information available

## Hazardous to the Ozone layer:

No information available

## Other adverse effects:

Because of many unknown items, do not discard in general environment.

### 13. DISPOSAL CONSIDERATIONS

Commit disposal to special waste disposal contractors approved by the Metropolitan, Hokkaido, or Prefectural Governors in case of Japan .

Dispose of the container and wrapping material in accordance with the Law related to Disposal of Waste and Cleaning.

### 14. TRANSPORT INFORMATION

#### International regulations

UN classification:	Not applicable to the criteria for classification
UN number:	Not applicable to the criteria for classification
UN proper shipping name:	Not applicable to the criteria for classification
Packing group:	Not applicable to the criteria for classification
Marine pollutant:	Not applicable to the criteria for classification

#### Domestic regulations:

Refer to laws and regulation that are applied.

#### Special precautions:

No information available

#### Special precautions and conditions which a user needs to comply with transport:

In case of bulk load, in order to prevent load collapse, keep the stack low or fix the goods in position

In order to prevent mingling of foreign matter, water leakage, and direct rays of the sun, cover the goods with a sheet.

#### Emergency response guideline number:

No information

### 15. REGULATORY INFORMATION

#### <Product>

Labor Safety and Health Act

Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace

Regulation of Labelling and Hazard Communication of Dangerous and Harmful Materials

### 16. OTHER INFORMATION

#### References

##### <Product>

SAFETY DATA SHEET of providing companies

Information on GHS-model SDS by Japan Advanced Information Center of Safety and Health

GHS classification results by National Institute of Technology and Evaluation

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The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product.

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