

Material Safety Data Sheet

1 Manufacturer Information

Item Name	Solder(including various shapes of bar, ingot,
Alloy composition	Sn99.3/Cu0.7

2 Hazardous Ingredients

Hazardous Components			CAS. No.	TWA	STEL	CEILING	LD 50	LC 50
Common Name	Chemical Formula	weight %						
Tin	Sn	99.3	7440-31-5	2	4	N/A	N/A	N/A
Silver	Ag		7440-22-4	0.01	0.03	N/A	N/A	N/A
Copper	Cu	0.7	7440-50-8	0.2	N/A	N/A	N/A	N/A
Stibium	Sb		7440-36-0	0.5	1.5	N/A	N/A	N/A
Rosin	-	2.5~3.0	8050/9/7	0.1	N/A	N/A	N/A	N/A

3 Hazards Identification

<i>Physical State and Appearance</i>	Solid
<i>Emergency Overview</i>	<u>Warning !</u> <u>Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.</u>
<i>Routes of Entry</i>	Inhalation.Ingestion.
<i>Potential Acute Health Effects</i>	<i>Eyes</i> <u>This product may be hazardous in case of eye contact (irritant).</u>
	<i>Skin</i> <u>This product may be hazardous in case of skin contact (irritant, sensitizer). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.</u>

<i>Inhalation</i>	Fumes and/ or dusts produced by this product may be hazardous in case of inhalation.
<i>Ingestion</i>	This product may be hazardous in case of ingestion.
<i>Potential Chronic Health Effects</i>	<p>Chronic effects: Fumes and /or dusts produced by this product may be hazardous in case of ingestion, of inhalation.</p> <p>This product may be hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant). Non-corrosive for skin. Non-permeator by skin.</p>
<i>Medical Conditions Aggravated by Overexposure</i>	Repeated or prolonged exposure is not known to aggravate medical condition.
<i>Overexposure/ Signs/ Symptoms</i>	Not available.

4 First Aid Measures

<i>Eye Contact</i>	<p>Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.</p>
<i>Skin Contact</i>	<p>In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.</p>
<i>Hazardous Skin Contact</i>	<p>Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.</p>

<i>Inhalation</i>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<i>Hazardous Inhalation</i>	Not available.
<i>Ingestion</i>	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
<i>Hazardous Ingestion</i>	Not available.
<i>Notes to Physician</i>	Not available.

5 Fire Fighting Measures

<i>Flammability of the product</i>	Non-flammable.
<i>Auto-Ignition Temperature</i>	Not applicable.
<i>Flash Points</i>	Not applicable.
<i>Flammable Limits</i>	Not applicable.
<i>Products of Combustion</i>	Not available.
<i>Fire Hazards in Presence of Various Substance</i>	Not applicable.
<i>Explosion Hazards in Presence of Various Substances</i>	Non-explosive in presence of open flames and sparks, of shocks.
<i>Fire Fighting Media and Instructions</i>	Not applicable.
<i>Protective Clothing (Fire)</i>	Not applicable.
<i>Special Remarks on Fire Hazards</i>	Not available.
<i>Special Remarks on Explosion Hazards</i>	Not available.

6 Accidental Release Measures

<i>Small Spill and Leak</i>	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
<i>Large Spill and Leak</i>	Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

7 Handling and Storage

<i>Handling</i>	Avoid contact with eyes. Avoid prolonged or repeated contact with skin. <u>Wash thoroughly after handling.</u>
<i>Storage</i>	Keep container tightly closed. Keep container in a cool, well-ventilated area.

8 Exposure Controls, Personal Protection

<i>Engineering Protection</i>	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits <u>If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.</u>
<i>Personal Protection</i>	<i>Eyes</i> <u>Splash goggles.</u> <i>Body</i> <u>Lab coat.</u> <i>Respiratory</i> <u>Dust respirator. Be sure to use an approved/ certified respirator or equivalent. Wear appropriate respirator when ventilation.</u> <i>Hands</i> <u>Gloves.</u> <i>Feet</i> <u>Not applicable.</u>
<i>Personal Protection in case of a large Spill</i>	<u>Splash goggles. Full Suit. Dust respirator. Boots. Gloves.</u> <u>A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.</u>

9 Physical and Chemical Properties

Physical State and Appearance	Solid
Molecular Weight	Not applicable.
Chemical Formula	Not applicable.
pH(1% Soln/ Water)	Not applicable.
Acid Value	Not available.
Boiling/ Condensation Point	Not available.
Melting/ Freezing Point	217~218°C (422.6~424.4°F)
Critical Temperature	Not available.
Vapor Pressure	Not applicable.
Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.

Odor	Not available.
Taste	Not available.
Color	sliver-grey.
Specific Gravity	7.38 (water =1)
Evaporation Rate	Not available.
VOC	Not available.
Viscosity	Not available.
LogKow	<u>The product is insoluble in water and oil.</u>
Ionicity (In Water)	Non-ionic
Dispersion Properties	Is not dispersed in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.
Solubility	Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.
Physical Chemical Comments	Not available.

10 Stability and Reactivity

Stability and Reactivity	This product is stable.
Conditions of Instability	Stable in normal conditions. Over melting point, will emit toxic tin oxides. (Tin)
Incompatibility with Various Substances	Slightly reactive with oxidizing agents, acids, moisture.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	Will not occur.
Corrosivity	Not considered to be corrosive for metals and glass according to our database.
Special Remarks on Corrosivity	Not available.

11 Toxicological Informaiton

Toxic and Chronic Effects on Humans	<p>Fumes and/or dusts produced by this product may be hazardous in case of ingestion, of inhalation. This product may be hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant). Non-corrosive for skin. Non-permeator by skin.</p> <p><u> </u></p> <p><u> </u></p> <p><u> </u></p> <p><u> </u></p> <p><u> </u></p> <p><u>MUTAGENIC EFFECTS:</u> Not available.</p> <p><u> </u></p> <p><u>TERATOGENIC EFFECTS :</u> Not available.</p> <p><u> </u></p> <p><u>DEVELOPMENTAL TOXICITY:</u> Not available.</p> <p><u> </u></p> <p><u>The product may be toxic to kidneys, lungs, liver, mucous membranes, upper respiratory tract, skin, eye, lens or cornea.</u></p> <p><u> </u></p> <p><u>Repeated or prolonged exposure to the substance can produce target organs damage.</u></p>
Toxicity to Animals	<p>LD50: N/A</p> <p>LC50: N/A</p>
Special Remarks on Chronic Effects on Humans	<p>Prolonged and repeated exposure to tin oxyde fumes may result in benigne pneumoconiosis (stannosis). (Tin)</p>
Chronic Effects on Humans	<p>N/A</p> <p>Developmental Toxicity: N/A</p>
Special Remarks on Other Toxic Effects on Humans	<p>MOLTEN METAL can cause severe Burns!</p> <p>Fumes and dust may irritate eyes, digestive system and respiratory tract. (Tin)</p>
Special Remarks on Toxicity on Animals	<p>No additional remark</p>

12 Ecological Information

<i>Ecotoxicity</i>	Not available
<i>BOD5 and COD</i>	Not available
<i>Biodegradable/ OECD</i>	Not available
<i>Mobility</i>	<p>Not available</p> <p>Possibly hazardous short term degradation products are not likely.</p> <p>However, long term degradation products may arise.</p>
<i>Toxicity of the Products of Biodegradation</i>	<p>The product itself and its products of degradation are not toxic.</p>
<i>Special Remarks on the</i>	Not available.

13 Disposal considerations

<i>Waste Information</i>	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
<i>Waste stream</i>	Not available. <i>Consult your local or regional authorities.</i>

14 Transport Information

<i>DOT Classification</i>	Not a DOT controlled material (United States).
<i>Special Provisions for</i>	Not applicable
<i>IMO/ IMDG Classification</i>	Not controlled under IMDG
<i>Marine Pollutant</i>	Not available.
<i>ADR/RID Classification</i>	Not controlled under ADR
<i>ICAO/ IATA Classification</i>	Not controlled under IATA.

15 Regulatory Information

<i>HCS</i>	Class: Sensitizing substance
<i>HCS Classification</i>	Class: Target organ effects.
<i>International Regulations</i>	Not available
<i>EINECS</i>	36/38-Irritating to eyes and skin.
<i>DSCL (EEC)</i>	43-May cause sensitization by skin contact.
<i>International Lists</i>	No products were found.