



## LEAD SOLDER ALLOYS

### SAFETY DATA SHEET

According to 1907/2006/EC, Article 31

#### I. MATERIAL IDENTIFICATION

COMPANY: TORREY S. CRANE CO PO BOX 374 492 SUMMER ST PLANTSVILLE, CT. 06479 cranesolder@aol.com	EMERGENCY PHONE: CALL: CHEM-TEL 1 800-255-3924 Contract #MIS0004515	INGREDIENTS: SEE LABEL ON CONTAINER OR SPOOL
TRADE NAME: LEAD SOLDER ALLOYS #231 WATER SOLUBLE FLUX	CHEMICAL NAME: TIN/LEAD/COPPER/SILVER/ ANTIMONY/BISMUTH/INDIUM	FORM OF PRODUCTS: BARS, SOLID WIRE, RIBBON

#### 2 HAZARDS IDENTIFICATION

##### PRIMARY ROUTES OF ENTRY:

☒Eye ☒Inhalation ☒Skin ☒Ingestion NTP IARC OSHA

##### Classification of the substance or mixture

**GHS Classification in accordance with OSHA HCS (29 CFR 1910)**



GHS08 Health hazard

Resp. Sens. 1B H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Skin Sens. 1B H317 May cause an allergic skin reaction.

##### Label elements

##### **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS08



GHS07

Signal word **Danger**

##### **Hazard statements**

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

H317 May cause an allergic skin reaction.

Precautionary statements

P285 In case of inadequate ventilation wear respiratory protection.

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

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

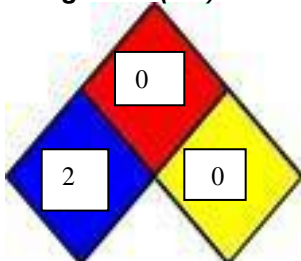
P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.



Classification system: **NFPA ratings (scale 0-4)**

**HMIS rating scale (0-4)**



Health = 2  
Fire = 0  
Reactivity = 0

HEALTH	2
FIRE	0
REACTIVITY	0
PPE	

Health = 2  
Fire = 0  
Reactivity = 0

### 3: COMPOSITION OF MIXTURE

**Chemical characterization: Mixtures Lead alloys having varying compositions**

**Description:** Mixture: consisting of the following components.

LEAD SOLDER ALLOYS MAY CONTAIN ONE OR MORE OF THE FOLLOWING INGREDIENTS:					
ELEMENT	CAS NUMBER	ECHA NUMBER	RANGE-%	OSHA PERMISSIBLE EXPOSURE LIMIT - 8 HOUR TWA	ACGIH THRESHOLD LIMIT VALUE - 8 HOUR TWA
Antimony	7440-36-0	231-146-5	0 - 85	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>
Bismuth	7440-69-9	231-177-4	0 - 100	N/A	N/A
Copper	7440.50-8	231-159-6	0 - 6	0.1 mg/m <sup>3</sup> Fume	0.2 mg/m <sup>3</sup> Fume
Indium	7440.74-6	231-180-0	0 - 100	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
Silver	7440-22-4	231-131-3	0 - 6	0.01 mg/m <sup>3</sup>	0.01 mg/m <sup>3</sup>
Tin	7440-31-5	231-141-8	0 - 100	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Lead	7439-92-1	231-100-4	0 - 100	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>
Oxyalkylene Polymer	25322-68-3		0 - 100	None established	18 mg/m <sup>3</sup> (10 ppm)
Carbamide	57-13-6		0 - 100	None established	18 mg/m <sup>3</sup> (10 ppm)

\* see 29 CFR 1910.1025

**Additional information:**

Composition and weight percent of solder alloys varies widely and can be determined by product label.

This solder product does not contain any Substance of Very High Concern (SVHC) on the European Chemicals Agency (ECHA) candidate list.

## 4: FIRST AID MEASURES

### Description of first aid measures

**After inhalation:** Supply fresh air; consult doctor if symptoms persist

**After skin contact:** Immediately wash with water and soap and rinse thoroughly.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:**

If symptoms persist consult doctor.

Seek immediate medical advice.

**Information for doctor:**

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

## 5: FIRE AND REACTIVITY DATA

### Extinguishing media

**Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

### Special hazards arising from the substance or mixture

*In case of fire, the following can be released:*

*Nitrogen oxides (NO<sub>x</sub>)*

*Carbon monoxide (CO)*

### Advice for firefighters

#### **Protective equipment:**

*Fire fighters should be fully trained and wear full protective clothing including an approved, self-contained breathing*

*apparatus which supplies a positive air pressure within a full face-piece mask.*

### CAUTION:

NEVER USE WATER AS AN EXTINGUISHING MEDIA IN AREAS NEAR MOLTEN METAL

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation

**Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:** Pick up mechanically.

### Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 HANDLING & STORAGE

### Handling:

**Precautions for safe handling** Prevent formation of dust.

**Information about protection against explosions and fires:** No special measures required.

### Conditions for safe storage, including any incompatibilities

#### **Storage:**

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: None.

**Specific end use(s)** No further relevant information available.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

overheating of alloy can produce metal fumes and oxides. Machining operations such as grinding, sawing, buffing can generate airborne particulate in work area. The exposure levels indicated in section II are relevant to these and other operations. Following are symptoms of overexposure to the various ingredients:

Antimony	Metallic taste, gastrointestinal upset, vomiting, diarrhea, dermatitis
Arsenic	Nausea, vomiting, diarrhea. Exposure to inorganic compounds may cause liver, skin, lung and lymphatic cancers.
Cadmium	<b>CANCER CAUSING AGENT</b>
	Dryness of throat, headache, shortness of breath and vomiting may occur from overexposure to fumes or dust.
Copper	Exposure to fume may cause dryness of throat, fatigue, head and body ache, chill and fever.
Indium	Indium dust or fume may cause lung irritation and chemical pneumonitis. This produces a widespread reduction in alveolar clearance similar to alveolar proteinosis and indium poisoning evidenced by weight loss, pulmonary edema, and blood and liver damage.
Lead	<b>CANCER CAUSING AGENT</b>
	Chronic overexposure to high levels of airborne or ingested lead may result in anemia, insomnia, weakness, constipation, nausea and abdominal pain. Prolonged overexposure may result in kidney and nervous system involvement and reproductive effects. Exposure may result in injury to a developing fetus
Silver	Argyria a blue-gray discoloration of the skin, mucous membranes, and eyes may result from inhalation of silver
Tin	Dust of tin oxide may cause pneumoconiosis.

NFPA RATINGS (SCALE 0-4):    HEALTH=2    FIRE=0    REACTIVITY=0

**FIRST AID:** Burns from molten metal should be treated as you would a burn from hot grease, cool exposed area with water and seek medical attention. Overheating of metal may generate fumes and/or particulate. If overexposure is suspected employee should be removed from area and a physician consulted. Ingestion of appreciable quantities of alloy is unlikely to occur. Inhalation of fumes – remove to fresh air. Fumes in eyes – flush with water. **\*\*REFER TO SECTION 3 FOR EXPOSURE LIMITS\*\***

### EXPOSURE CONTROLS

**Personal protective equipment:**

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Wash hands before breaks and at the end of work.

Breathing equipment:

Exposure Controls: Use appropriate engineering control such as process enclosures, local exhaust ventilation to control

airborne levels below recommended exposure limits.

When ventilation is not sufficient to remove airborne levels from the breathing zone, a NIOSH safety approved respirator or

self-contained breathing apparatus should be worn. Consult with local procedures for selection, training,

inspection and

maintenance of the personal protective equipment.

Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.



#### Protective gloves

Heat resistant gloves should be worn when working with molten alloy material of gloves:

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.*

*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:* should be worn during soldering operation.



#### *Face Shield with Safety Glasses*

## 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State: (normal Conditions) SOLID		Appearance and Odor: METALLIC GRAY - ODORLESS	
Melting Point: 117 - 1000 F	Boiling Point: N.A.	Vapor Pressure: N.A.	Density: 0.26 - 0.42lb/in3

### Appearance:

Form: Metal  
Color: Silver grey  
Odor: Odorless

## 10 STABILITY AND REACTIVITY

### Reactivity

#### Chemical stability

*Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.*

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** Strong acids, strong oxidizers.

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

#### Acute toxicity:

*Primary irritant effect:*

*on the skin: Irritant to skin and mucous membranes.*

*on the eye: Irritating effect.*

#### Additional toxicological information:

*Carcinogenic categories*

*ARC (International Agency for Research on Cancer), NTP (National Toxicology Program)*

*7439-92-1 LEAD*

## 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.

Danger to drinking water if even extremely small quantities leak into the ground.

#### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 13 DISPOSAL CONSIDERATIONS

No special precautions are required for spills of bulk material. Scrap alloy can be reclaimed for reuse. Follow Federal, State and local regulations for disposal.

## 14 TRANSPORT INFORMATION

Not applicable

## 15 REGULATORY INFORMATION

Solder alloys contain chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

7440-22-4 (silver) 7440-50-8 (copper)

TSCA (Toxic Substances Control Act): Torrey Crane certifies that all components listed below for the subject finished product are on the TSCA Inventory of Chemical Substances and are not subject to any chemical specific regulation under TSCA Section 12(b) export notification requirements delineated at 40 CFR part 707, subpart D.

**California Proposition 65**

*WARNING: This product contains a chemical(s) known to the State of California to cause cancer. "LEAD"  
Chemicals known to cause reproductive toxicity:*

*WARNING: This product contains a chemical(s) known to the State of California to cause birth defects and/or other reproductive harm. "LEAD"*

*EPA (Environmental Protection Agency) 7440-22-4 (silver), 7440-50-8 (copper) 7439-92-1 (lead)  
NIOSH-Ca, OSHA-Ca, None of the ingredients is listed  
OSHA-Ca (Occupational Safety & Health Administration) – None listed*

## 16 OTHER INFORMATION

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Torrey Crane extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness, or suitability of this data for any purchaser's use. The data on this 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 Safety Data Sheet as a source for hazard information.

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