LEAD FREE

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 FREE SOLDER ALLOYS **ACID CORE FLUX (AC)**	CHEMICAL NAME: TIN/COPPER/SILVER/ ANTIMONY/BISMUTH/INDIUM	FORM OF PRODUCTS: BARS, SOLID WIRE, RIBBON

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

GHS08 Health hazard
Resp. Sens. 1B H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

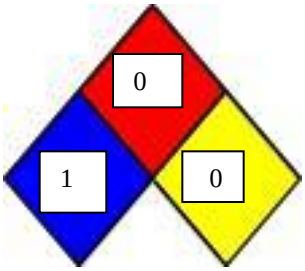
GHS07
Skin Sens. 1B H317 May cause an allergic skin reaction.

Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
Hazard pictograms

GHS08
Signal word Danger

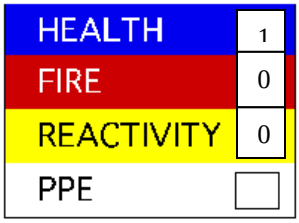
Hazard statements
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
Precautionary statements
P285 In case of inadequate ventilation wear respiratory protection.
P280 Wear protective gloves/protective clothing/eye protection/face 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)*



Health = 1
Fire = 0
Reactivity = 0

HMIS rating scale (0-4)



Health = 1
Fire = 0
Reactivity = 0

3: COMPOSITION OF MIXTURE

Chemical characterization: Mixtures Lead free alloys having varying compositions
Description: *Mixture: consisting of the following components.*

	LEAD FREE SOLDER ALLOYS MAY CONTAIN ONE OR MORE OF THE FOLLOWING INGREDIENTS: (none of which is listed as a chemical of concern by the "European Chemicals Agency" (echa)).				
ELEMENT	CAS NUMBER	ECHA NUMBER	RANG E-%	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/m3	0.5 mg/m3
Bismuth	7440-69-9	231-177-4		N/A	N/A
Copper	7440.50-8	231-159-6	0 - 100	0.1 mg/m3 Fume	0.2 mg/m3 Fume
Indium	7440.74-6	231-180-0		0.1 mg/m3	0.1 mg/m3
Silver	7440-22-4	231-131-3	0 - 6	0.01 mg/m3	0.01 mg/m3
Tin	7440-31-5	231-141-8		2 mg/m3	2 mg/m3
Azelaic Acid	123-99-9		0 - 100	None established	Non established
Urea	57-13-6		0 - 6	None established	5 mg/m3 air
Ethylene Diamine dihydrochloride	333-18-6		0 - 100	None established	50 ppm
Ethylene dihydrochloride	557-66-4		0 – 4	None established	None established
Succinimide	123-56-8		0 - 4	None established	None established
			0 – 4		
			0 – 4		
			0 - 4		

TIN - EINECS: 231-141-8

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 in case of complaints.
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: *CO2, 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 (NOx)
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.

Flash Point:	Boiling Point	Reactivity:
flux >400 F	flux 385 F	Alloys are stable non-hazardous solids at room temperature

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

REFER TO SECTION 3 FOR EXPOSURE LIMITS

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 .
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.
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=1 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

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 mat*erial 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: flux 385 F	Vapor Pressure: N.A.	Density: 0.26 - 0.42lb/in3

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) none of ingredients 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.

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 1985 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
Chemicals known to cause cancer: None of the ingredients are listed
Carcinogenic categories

EPA (Environmental Protection Agency) 7440-22-4 (silver), 7440-50-8 (copper)
NIOSH-Ca, OSHA-Ca, None of the ingredients is 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 responsibilty 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.

DATE ISSUED:6/19/2014 PREPARED BY: DAVID E. BAKER, PRESIDENT

The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any representation or warranty, express or implied regarding the accuracy or correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.