

**NATIONAL SOLDER CO**  
**Material Safety Data Sheet**  
OSHA's Hazard Communication Standard

**LEAD FREE SOLDERS**

**Tin/Silver/Copper Alloys**

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**Section I:**

NATIONAL SOLDER CO  
13 ARKIN STR  
INDUSTRIES EAST  
GERMISTON 1401

Telephone 011-8739000

**Section II: Hazardous Ingredients/Identity information**

Hazardous Component	CAS #	OSHA TWA	ACGIH TWA	Other limits
Tin	7440-31-5	2mg/M3	2mg/M3	NE
+ Copper	7440-50-8	0.1mg/M3	0.2mg/M3	NE
% as specified				
+ Silver	7440-22-4	0.01mg/M3	0.01mg/M3	NE
% as specified				

Only those ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. An ingredient marked with an asterisk (\*) is also listed in 29CFR 1910.1200(D) #4 as a known or suspected cancer hazard.

+ denotes a chemical regulated as toxic by the Environmental Protection Agency (EPA) as outlined in 40CFR Part 372 (section 313)

**Section III: Physical/Chemical Characteristics**

Boiling Point: 2210 C (4010 F)	Specific Gravity: 7.46
Vapour Pressure (mm Hg): NE	Melting Point: 217 C
Vapour Density: NE	Evaporation Rate
Solubility in water: NIL	(butyl acetate=1): NE
Appearance and odour: Gray solid, odourless	

**Section IV: Fire and Explosion Hazard Data**

Flash Point: Non-flammable	Flammable limits lel: NA
uel: NA	
Extinguishing media: All	
Special fire fighting procedures: Use self contained breathing apparatus.	
Unusual Fire and Explosion Hazards: High concentrations of dust may present an explosion hazard.	
May release metal and metal oxide fumes.	

## **Section V: Reactivity Data**

Stability: STABLE Conditions to avoid: none  
Incompatibility (materials to avoid): Oxidizers, turpentine, ammonia, acids, chlorides.  
Hazardous Decomposition or By-products (incomplete combustion): Metal & metal oxides.  
Hazardous Polymerization: WILL NOT OCCOUR Conditions to avoid: any

## **Section VI: Health Hazard Data**

Routes of entry: Inhalation? Yes Skin? No Ingestion? Yes

Health Hazards (acute and chronic: Contact with dust and fumes may cause skin, eye and respiratory irritation. Excessive inhalation of dust or fumes may result in "metal fume fever", with the onset of symptoms taking several hours, after exposure, to manifest. Ingestion May cause digestive tract irritation. Ingestion of very large amounts of material may be toxic. Excessive and repeated inhalation may result in benign pneumoconiosis.  
Chronic exposure via inhalation and ingestion may result in liver, red blood cell, kidney, reproductive and respiratory system effects. Excessive and repeated skin exposure may result in systemic skin effects including pigmentation changes. Studies show That health risks vary by individual. Always minimize exposure.

Carcinogenicity: not determined NTP? No IARC Monographs? No

Signs and symptoms of exposure: Inhalation-Nose & throat irritation, headache, dizziness, difficulty breathing, flu like symptoms, greyish pallor to skin. Ingestion-nausea, vomiting, cramps. Skin-redness, burning, rash, dryness. Eye-redness, burning, tearing, blurred vision.

Medical Conditions Aggravated by exposure: Skin, blood and respiratory conditions

Emergency first aid procedures:

Skin: Flush with water immediately - Seek medical attention if burns are present

Eyes: Flush with water for 15 minutes - Seek medical attention

Ingestion: Drink large amounts of water, induce vomiting if practical-see medical attention.

Never give anything by mouth to an unconscious person.

Inhalation: Remove to fresh air. Support respiration if required - Seek medical attention.

## **Section VII: Precautions for Safe Handling and Use**

Steps to be taken if material is released or spilled: Vacuum or flush into a chemical sewer. Do not use any method that will generate dust.  
Waste Disposal Method: dispose of in accordance with all local state regulations.

