


MATERIAL SAFETY DATA SHEET July 1, 1986

SECTION I NAME

Product	TIN METAL
Chemical Synonyms	Tin Metal, powder, granular, mossy
Formula	Sn
Unit(s) Size	30, 100, 500 grams; 2.5 Kg.
C.A.S. No.	7440-31-5


 CHEMTREC
 800-424-9300
 Day: 716-326-6177
 Night: 716-334-4222
 NFPA HAZARD RATING
 LEAST 0 SLIGHT 1 MODERATE 2 HIGH 3 EXTREME 4

Health	2
Fire	0
Reactivity	0

SECTION II HAZARDOUS INGREDIENTS OF MIXTURES

Principal Hazardous Component(s)	%	TLV Units
Tin Metal	100%	TMA: 2 mg/m ³ (A1r)

CAUTION: HARMFUL IF INHALED AS DUST OR FUME.

SECTION III PHYSICAL DATA

Melting Point (°F)	231.9° C	Specific Gravity (H ₂ O = 1)	7.31 at 20° C
Boiling Point (°F)	2270° C (4118° F)	Percent Volatile by Volume (%)	Non-volatile (NA)
Vapor Pressure (mm Hg)	1 mm at 1492° C	Evaporation Rate	Non-volatile (NA)
Vapor Density (Air = 1)	4.11		

Appearance and Odor: Silvery white metallic powder, granular, mossy, shot; no odor.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Not Flammable (NA)	Flammable Limits in Air	NA	Lower	Upper
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Extinguisher Media: Use any media suitable for extinguishing supporting fire.

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH-approved self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Slight fire hazard. Fire or excessive heat may produce hazardous dust or fume. In contact with acids, emits hydrogen gas. This gas is flammable and can cause explosion.

D.O.T. NON-REGULATED



FREY SCIENTIFIC
 905 HICKORY LANE MANSFIELD, OHIO 44905

MSDS No. Effective Date

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA

Threshold Limited Value

ACGIH 1984-85-TLV 8-hr. TMA:
 2 milligrams per cubic meter in air.

Effects of Overexposure

INHALATION: Exposure to the fume or dust may lead to pneumoconiosis without symptoms of interference with pulmonary functions. **INGESTION:** May irritate stomach lining. **EYES:** May irritate eyes. **SKIN:** None expected. **IMMUNIZATION:** When inhaled as a dust or fume tin leads to a benign pneumoconiosis.

Emergency and First Aid Procedures

EYES: Flush thoroughly with water, keep eye lids open when flushing with water. If irritation develops or persists, get medical attention. **IMMUNIZATION:** Remove to fresh air. If ill effects develop, get medical attention. **INGESTION:** If swallowed, if conscious, give one or two glasses of water, induce vomiting and call physician. **SKIN:** Flush with water.

00985

SECTION VI REACTIVITY DATA

Stability	Unstable
	Stable

Conditions to Avoid: Contact with acid emits hydrogen gas.

Incompatibility (Materials to avoid)

Strong oxidizers, chlorine, cupric nitrate, potassium, sodium peroxide, sulfur, Halogens, sulfuric, chlorosulfuric and pyrosulfuric acid.

Hazardous Decomposition Products

Oxides of tin may be present. Reacts with acids; will cause evolution of flammable hydrogen gas.

Hazardous Polymerization

Will Not Occur

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Sweep up and recycle or place in a suitable container for disposal.

Waste Disposal Method

Uncontaminated material may be disposed of in a sanitary landfill.

SECTION VIII SPECIAL PROTECTION INFORMATION

Discharge, treatment, or disposal may be subject to federal, state, or local laws.

Respiration Protection

None should be needed. Conditions present, work in ventilation hood or wear a NIOSH-approved dust mask.

Ventilation

Local Exhaust: None at room temperature. Recommended. Mechanical (General): Recommended. Other: None.

Protective Gloves

None should be needed. Eye Protection: Chemical safety glasses.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: Store in a cool, dry place away from fire hazards and oxidizing materials.

Other Precautions

Read label on container before using. Avoid conditions which create fume. Store away from acid and acid fumes.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
 Rev. No. 11/2/87 Date 11/2/87 Approved *Wanda L. Carroll* Chemical Safety Coordinator

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