USA - OSHA SAFETY DATA SHEET

Issue Date: 1-September-2015 **Revision Date:** / /

1. IDENTIFICATION

Product Name: Tin

Synonyms: Tin Bar, Tin Ingot, Tin Wire, Tin Sheet

Recommended Uses: Industrial use alloying

Uses Advised Against: None known.

Manufacturer:
Ames Metal Products
2211 Foster ave
Wheeling, IL 60090
Ph: 847-749-1672

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This product is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/Irritation	Category 2
Eye Corrosion/Irritation	Category 2B

Label elements

Warning

Hazard statements

Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation

Appearance: Metallic, light yellow
Physical state: Solid
Odor: Odorless

Precautionary Statements – Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements – Response
IF exposed or concerned: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth

Precautionary Statements – Storage
Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 77°F (25°C).

Precautionary Statements – Disposal
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Other information None available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Material	% by Wt.	CAS #	OSHA EXPOSURE LIMIT
Tin	100	7440-31-5	2.00 mg/m^3

4. FIRST AID MEASURES

First aid measures

Eye Contact In case of eye contact, immediately flush eyes with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention if irritation persists. Do not rub affected area.

Skin Contact Wash off immediately with soap and plenty of water. If skin irritation persists, call a Physician.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical Attention immediately. If conscious, have victim clear nasal passages.

Ingestion 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 collar, tie, belt, or waistband.

Most important symptoms and effects, both acute and delayed

Symptoms Tin is not regarded as toxic but excessive exposure can cause fever, nausea, stomach cramps or diarrhea.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE – FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, foam or CO2.

Unsuitable extinguishing media: Do not use water or halogenated extinguishing media.

Specific hazards arising from the chemical: When heated in Chlorine, Tin reacts, producing light and much heat. In the presence of water, cupric nitrate and tin foil, on prolonged intimate contact, will produce flaming and sparking. Sodium peroxide and Potassium peroxide, Potassium dioxide, oxidize tin with incandescence. The reaction between Tin and Tellurium attains incandescence.

Explosion data:

Tin reacts violently or explosively with fused ammonium nitrate below 200°C. Contact of metallic Tin with turpentine may cause fires and explosions.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Not considered to be a fire hazard. Powder/dust is flammable when heated or exposed to flame.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Evacuate personnel to safe areas. Avoid contact with skin, eyes and inhalation of dusts and fumes. Use personal protection recommended in Section 8.
For emergency responders	Wear respiratory protection. Wear proper personal protective equipment (gloves and goggles). Wear appropriate outer garment to protect clothing.
Environmental precautions	This product itself and its products of degradation are not toxic.
Environmental precautions	Prevent entry into waterways, sewers, surface drainage systems and poorly ventilated areas.

Methods and material for containment and cleaning up

Methods for containment	Avoid creating dust. Safely stop source of spill. Restrict non-essential personnel from area. All personnel involved in spill cleanup should avoid skin and eye contact by wearing appropriate personal protection equipment. Do not breathe dust.
Methods for cleaning up	Avoid dust formation. Clean up dusts with high efficiency particulate air (HEPA) filtered vacuum equipment or by wet cleaning.
Prevention of secondary hazards	Clean contaminated objects and area thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Use personal protection recommended in Section 8. Avoid generation of dust.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible materials	Incompatible with Bromine, Bromine Trifluoride, Chlorine, Chlorine Trifluoride + Carbon, Water + Cupric Nitrate, Sodium Peroxide, water vapor + Carbon Tetrachloride, Disulfur Dichloride, fused Ammonium Nitrate, Potassium Dioxide, Tellurium, Turpentine, Acids (Nitric, Sulfuric,

Hydrochloric, Acetic Acids), caustic Alkali, Iodine Bromide. In the presence of water vapor, the interaction between Tin and Carbon Tetrachloride is violent. The interaction Between Tin and Disulfur Dichloride is violent. Tin reacts violently with Iodine Bromide.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Tin 7440-31-5	TWA: 2.0 mg/m^{3}Sn	TWA: 2.0 mg/m^{3}Sn	IDLH: 100 mg/m^{3}Sn TWA: 2.0 mg/m^{3}Sn

Appropriate engineering controls

Engineering Controls Use contained process enclosures, local exhaust ventilation or other engineering controls to maintain aerosols below the exposure limit. If user operations generate dust, fume or mist use ventilation to keep exposure to airborne contaminates below the exposure limit.

Individual protection measures, such as personal protective equipment

Eye/face protection Use safety glasses with side shields or chemical goggles.

Skin and body protection Not normally needed.

Respiratory protection Only required if exposure limits are exceeded. Use NIOSH/MSHS approved respirator for toxic dust and/or fume.

General Hygiene Considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear disposable gloves and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid

Appearance Metallic, faint grey

Odor None

Property	Values	Remarks *Method
pH	Not available	
Melting point	449.4°F (231.9°C)	
Boiling point/boiling range	4544.6°F (2507°C)	
Flash Point	Not applicable (high-melting point solid)	
Evaporation rate	Not applicable (high-melting point solid)	
Flammability (solid, gas)	Not combustible	
Flammability Limit in Air	Not combustible	
Upper flammability limit:	Not combustible	

Lower flammability limit:	Not combustible
Vapor pressure	Not volatile
Vapor density	Not volatile
Specific Gravity	7.31 (Water = 1)
Water solubility	Insoluble in cold water, hot water
Partition coefficient	Not applicable (inorganic)
Auto ignition temperature	Not combustible
Decomposition temperature	Not combustible
Kinematic viscosity	Not applicable (solid)
Dynamic viscosity	Not applicable (solid)
Explosive properties	Not considered to be explosive
Oxidizing properties	Not considered to be oxidizing

Other information

Softening point	Not available
Molecular weight	118.71 g/mole
VOC Content (%)	Not available
Bulk density	Not available

10. STABILITY AND REACTIVITY

Reactivity

Stable under normal conditions.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Excess heat, incompatible materials

Hazardous polymerization does not occur.

Conditions to avoid

Avoid excessive exposure to heat.

Incompatible materials

Incompatible with Bromine, Bromine Trifluoride, Chlorine, Chlorine Trifluoride + Carbon, Water + Cupric Nitrate, Sodium Peroxide, water vapor + Carbon Tetrachloride, Disulfur Dichloride, fused Ammonium Nitrate, Potassium Dioxide, Tellurium, Turpentine, Acids (Nitric, Sulfuric, Hydrochloric, Acetic Acids), caustic Alkali, Iodine Bromide. In the presence of water vapor, the interaction between Tin and Carbon Tetrachloride is violent. The interaction Between Tin and Disulfur Dichloride is violent. Tin reacts violently with Iodine Bromide.

11. TOXICOLOGICAL INFORMATION

nformation on likely routes of exposure

Inhalation	Inhalation of dust and fume must be avoided.
Eye contact	Dust or fume will be irritant.
Skin contact	Not a route of entry into the body.
Ingestion	Tin is not regarded as toxic but excessive exposure can cause fever, nausea, stomach cramps or diarrhea.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Tin 7440-31-5	2207mg Sn/kg Rat	Not available	Not available

Information on toxicological effects

Symptoms Not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Tin metal granules or dust: May cause skin irritation by mechanical action.

Serious eye damage/eye irritation Tin metal granules or dust: Can irritate eyes by mechanical action.

Inhalation Inhalation of dust and fumes must be avoided.

Ingestion Ingestion of dust and fumes must be avoided. Tin is not regarded as toxic but excessive exposure can cause fever, nausea, stomach cramps or diarrhea.

Carcinogenic effects Not available.

Chemical Name	ACGIH	IARC	NTP	OSHA
Tin 7440-31-5	Not Listed	Not Listed	Not Listed	Not Listed

Numerical measures of toxicity – Product Information

The following values are calculated based on chapter 3.1 of the GHS document.

Inhalation LC50 None available

12. ECOLOGICAL INFORMATION

Environmental Toxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacean
Tin 7440-31-5	None listed	None listed	None listed	None listed

Bioaccumulation Not available

Mobility Not available

Other adverse effects None available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note: This product is not regulated for domestic transport by land, air or rail.

DOT

Proper shipping name	Not applicable
Hazard Class	Not applicable
Packing Group	Not applicable
Reportable Quantity (RQ)	Not applicable
Marine pollutant	Not applicable
Emergency Response Guide	Not applicable

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS – European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS – Japan Existing and New Chemical Substances
IECSC – China Inventory of Existing Chemical Substances
KECL – Korean Existing and Evaluated Chemical Substances
PICCS – Philippines Inventory of Chemicals and Chemical Substances
AICS – Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain a chemical that is subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS No.	Weight - %	SARA 313 – Threshold Values %
Tin	7440-31-5	86 - 90	Not Listed

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are not regulated pollutants pursuant to the Clean Water

Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA – Reportable Quantities	CWA – Toxic Pollutants	CWA – Priority Pollutants	CWA – Hazardous Substances
Tin 7440-31-5	-	-	-	-

CERCLA

This material, as supplied, does not contain substances regulated as a hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

US State Regulations

California Proposition 65

This product contains a chemical known to the state of California to cause birth defects or other reproductive harm.

Chemical Name	California Proposition 65
Tin – 7440-31-5	Not Listed

US State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Tin – 7440-31-5	X	-	X	-	-

US EPA Label Information

EPA Pesticide Registration Number Not available.

16. OTHER INFORMATION

Issue Date 29-May-2015
Revision Date
Revision Note None

Disclaimer

This information provided in this Safety Data Sheet is correct to the best of our knowledge, information and Belief at the date of its publication. The information given is designed only as guidance for safe handling, use, Processing, storage, transportation, disposal and release and is not to be considered a warranty or quality Specification. The information materials or in any process, unless specified in the text.