

HEAPS, ARNOLD & HEAPS LTD

Manufacturers of Lead, Tin & Solder Products

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MSDS: Tin

1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Name: Tin

Supplier: Heaps, Arnold & Heaps Ltd, Quintec Court, Barbot Hall Industrial Estate, Rotherham, South Yorkshire, S61 4RN. TEL: 01709 837669

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Tin (Sn)

EU No: 231-141-8

Cas No: 7440-31-5

Content %: >99

3. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008

CLP-Classification: This substance is classified as not hazardous according to regulation (EC) No. 1272/2008 [CLP].

Not classified

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Classification: The product is non-dangerous in accordance with Directive

67/548/EEC.

Not classified

Label elements

Labelling according to Regulation (EU) 1272/2008

Not applicable.

Labelling according to Directives (67/548 - 1999/45)

Not relevant

Other hazards

Other hazards : Results of PBT and vPvB assessment :

Not applicable

Product/Substance is inorganic.

4. FIRST AID MEASURES

Inhalation of Fumes or Dust: Move person to fresh air. Keep person at rest. Seek medical attention.

Ingestion of Dust: Do not induce vomiting, encourage drinking of water. Seek immediate medical attention.

Eye Contact from Dust: Ensure that any contact lenses are removed from the eyes before rinsing. Irrigate eyes with plenty of water for 15 minutes and seek medical attention if irritation persists.

Skin Contact: Wash affected area with soap and water. Seek medical attention if irritation persists as it may be due to contact with other substances or chemicals.

Most important symptoms and effects, both acute and delayed

Inhalation: No adverse effects are expected. Inhalation of dust may cause irritation of the respiratory system

Skin contact: No adverse effects are expected. Contact with dust can cause mechanical irritation or drying of the skin. Contact with hot product will cause thermal burns.

Eye contact: No adverse effects are expected. Dust contact with the eyes can lead to mechanical irritation. Contact with hot product will cause thermal burns.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Non-flammable but molten may ignite adjacent materials. Use Dry powder, CO2 or Foam. Do not use water.

Exposure Hazards: Toxic Fumes may be produced during a fire.

Protection of Firefighters: Wear positive pressure self-contained breathing apparatus and suitable protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal Protection: No special measures required whilst Tin is in its solid metallic state. When melting Tin or cleaning up any Tin spillage protective clothing must be worn, this would include eye protection, gloves and an approved face mask. This precaution also applies if Tin dust is present.

Environmental Precaution: Avoid entry into water courses.

Clean-up Procedures: Spillages should be cleaned and placed in to a sealed container and then sent to a specialist processing company for treatment.

7. HANDLING AND STORAGE

Handling Precautions: Tin is a heavy metal; extreme care should be taken when lifting the material. Follow the guidelines set out in the HSE Manual Handling Regulations. Wear gloves, protective clothing and boots and follow standard personal hygiene procedures.

Storage: Store in a dry area, ensure that the floor loading is not exceeded.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Tin (7440-31-5)

Austria	MAK (mg/m ³)	2 mg/m ³
Austria	MAK Short time value (mg/m ³)	4 mg/m ³
Belgium	Limit value (mg/m ³)	2 mg/m ³
Cyprus	OEL TWA (mg/m ³)	2 mg/m ³
Gibraltar	OEL TWA (mg/m ³)	2 mg/m ³
Greece	OEL TWA (mg/m ³)	2 mg/m ³
Italy - Portugal – USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
Spain	VLA-ED (mg/m ³)	2 mg/m ³
Switzerland	VME (mg/m ³)	0,02 mg/m ³
Switzerland	VME (ppm)	0,004 ppm
Finland	HTP-arvo (8h) (mg/m ³)	2 mg/m ³

Ireland	OEL (8 hours ref) (mg/m ³)	2 mg/m ³
Malta	OEL TWA (mg/m ³)	2 mg/m ³
Poland	NDS (mg/m ³)	2 mg/m ³
Sweden	nivågränsvärde (NVG) (mg/m ³)	2 mg/m ³

Recommended monitoring procedures:

Personal monitoring

Concentration measurement in air

Tin (7440-31-5)

DNEL/DMEL (workers)

Acute - systemic effects, dermal	133,3 mg/kg bodyweight/day
Acute - systemic effects, inhalation	11,75 mg/m ³
Long-term - systemic effects, dermal	133,3 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	11,75 mg/m ³

DNEL/DMEL (general population)

Acute - systemic effects, dermal	80 mg/kg bodyweight
Acute - systemic effects, inhalation	3,476 mg/kg bodyweight/day
Acute - systemic effects, oral	80 mg/kg bodyweight
Long-term - systemic effects, oral	80 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	3,476

Respiratory Protection: Wear approved face masks when melting Lead or working in the vicinity of Lead dust particles make sure the face mask meets the standard required. Employ mechanical ventilation equipment when melting Lead in enclosed areas.

Hand Protection: Wear suitable gloves.

Eye Protection: Wear safety goggles when melting Lead or lead welding.

Skin Protection: Wear gloves and protective clothing. Follow standard personal hygiene procedures.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	solid
Colour:	white
Odour:	odourless

Odour Threshold:	No data available
pH:	Not applicable
Melting point/range:	231,9 °C
Boiling point/boiling range:	2507 °C
Flash point:	study scientifically unjustified
Evaporation rate:	No data available
Flammability (solid, gas):	Non-flammable.
Explosion limits (LEL, UEL):	Not applicable
Vapour pressure:	1 Pa @ 1224 °C
Vapour density:	No data available
Density:	study scientifically unjustified
Relative density:	7,31 g/cm ³ @ 20 °C
Water solubility:	0,004 mg/l @ 20 °C
Solubility in other solvents:	study scientifically unjustified
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	study scientifically unjustified
Explosive properties:	Not applicable
The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.	
Oxidizing properties:	Not applicable
The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties	

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions at low temperature.

Conditions to Avoid: N/A

Materials to Avoid: Chlorine, Oxidising agent, Copper nitrate, Ammonium nitrate

Hazardous Decomposition Products: Hazardous decomposition products formed under fire conditions melted.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: Not classified (Based on available data, the classification criteria are not met.)

Tin (7440-31-5)

LD50/oral/rat > 2000 mg/kg bodyweight

LD50/dermal/rat > 2000 mg/kg

LC50/inhalation/4h/rat > 0,005 mg/m³

Tin (7440-31-5)

LD50/oral/rat > 2000 mg/kg bodyweight

LD50/dermal/rat > 2000 mg/kg bodyweight

LC50/inhalation/4h/rat > 5 g/m³

Skin corrosion/irritation: Not classified (Based on available data, the classification criteria are not met.) pH: Not applicable

Serious eye damage/eye irritation: Not classified (Based on available data, the classification criteria are not met.) pH: Not applicable

Respiratory or skin sensitisation: Not classified (Based on available data, the classification criteria are not met.)

Germ cell mutagenicity: Not classified (Based on available data, the classification criteria are not met.)

Carcinogenicity: Not classified (Based on available data, the classification criteria are not met.)

Reproductive toxicity: Not classified (Based on available data, the classification criteria are not met.)
NOAEL: 1000 mg/kg bodyweight/day

Specific target organ toxicity (single exposure): Not classified (Based on available data, the classification criteria are not met.)

Specific target organ toxicity (repeated exposure): Not classified (Based on available data, the classification criteria are not met.)

Tin (7440-31-5)

Additional information NOAEL, subacute, Rat: 1000 mg/kg bw/day

Tin (7440-31-5)

NOAEL (subacute,oral, animal/male,28 days) 1000 mg/kg bodyweight

NOAEL (subacute,oral, animal/female,28 days) 1000 mg/kg bodyweight

Aspiration hazard: Not classified (Based on available data, the classification criteria are not met.)

Other information

Symptoms related to the physical, chemical and toxicological characteristics, see section 4.2.

12. ECOLOGICAL INFORMATION

Toxicity: Ecological injuries are not known or expected under normal use.

Tin (7440-31-5)

LC50 fish 1	> 14,4 µg/l
EC50 other aquatic organisms 1 (28d)	> 1000 mg/kg sediment dw
ErC50 (algae)	>= 19,2 µg/L
LOEC (chronic)	(7d) 200 µg/L

Tin (7440-31-5)

LC50 fish 1	> 12,4 µg/l (96h)
EC50 other aquatic organisms 1 living in the sediment	> 1000 mg/kg sediment dw Long-term toxicity of organisms
ErC50 (algae)	> 19,2 µg/L (72h)
LOEC (chronic)	200 µg/L Toxicity to aquatic invertebrates

Persistence and degradability

Persistence and degradability : The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

Bioaccumulation : Does not bioaccumulate.

Mobility in soil

Mobility: Log Kd 2.1 - 1.3 L/kg

Results of PBT and vPvB assessment

PBT/vPvB : The study does not need to be conducted because the substance is inorganic.

Other adverse effects

Other information: No data available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Where possible recycling is preferred to disposal or incineration. Dispose according to legislation.

Contaminated packaging: If recycling is not practicable, dispose of in compliance with local regulations.

Additional ecological information: Should not be released into the environment.

List of suggested waste codes/waste designations in accordance with the EWC:

: Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION:

No restrictions on transportation.

15. REGULATORY INFORMATION

EU-Regulations

Restrictions on use: Not applicable

This product contains an ingredient according to the candidate list of Annex XIV of the REACH

Regulation 1907/2006/EC.: none

Authorisations: Not applicable

16. OTHER INFORMATION

The application of the soft metal presents negligible risks providing standard sensible workplace cleanliness is adopted. Working with tin or tin alloys requires the use of approved eye protection and other recognized personal protection such as approved protective face masks. It is recommended that a simple workplace risk assessment is made in accordance with the point stated on pages 1, 2 & 5 of the regulations. In general, working with the metal in the open air presents negligible risk providing adequate washing facilities are available at the workplace for hand cleaning. The data contained in this Safety Data Sheet has been supplied as required by the Chemical (Hazard Identification and Packaging) Regulations 2009, as amended, for the purpose of protecting the health and safety of industrial and commercial users who are deemed capable of understanding and acting on the information provided. Please ensure that it is passed to the appropriate person(s) in your company, who are capable of acting on the information. This information is given in good faith, being based on the latest knowledge available to Heaps, Arnold & Heaps. No known relevant information has been omitted from this Material Safety Data Sheet and the information provided is designed to enable the user to use the product safely. The user should not assume on the basis of the information provided in this sheet that the product is suitable for any abnormal use. The company cannot accept liability to any customer, their employees or any other person whatsoever for any loss, injury or damage, whether direct or consequential, which may be caused by any error or omission from this sheet, whether such error or omission is negligent or otherwise. If the information provided is insufficient to ensure safety in any particular application, contact Heaps, Arnold & Heaps for further advice before the proposed application is undertaken.