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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Substance  
Trade name/designation : Tin  
Chemical name : Tin  
EC-No. : 231-141-8  
CAS-No. : 7440-31-5  
Product group : Trade product

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

Main use category : Industrial use  
Use of the substance/mixture : Metals

##### 1.2.2. Uses advised against

No data available

#### 1.3. Details of the supplier of the safety data sheet

Trafigura Ventures V.B.V.  
Evert van de Beekstraat 1-82  
The Base, Tower B - 5th Floor  
1118 CL Schiphol - The Netherlands  
T +31 20 504 1800  
[TrafiguraReach@trafigura.com](mailto:TrafiguraReach@trafigura.com)

#### 1.4. Emergency telephone number

Emergency number : +32 3 575 03 30  
This telephone number is available 24 hours per day, 7 days per week.

Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	+353 1 809 21 66 (public, 8am - 10pm, 7/7) +353 01 809 2566 (Professionals, 24/7)
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, 24/7, healthcare professionals only)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture


Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

#### 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Not applicable.

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### **2.3. Other hazards**

Other hazards : PBT/vPvB data : Not applicable. Product/Substance is inorganic.

## **SECTION 3: Composition/information on ingredients**

### **3.1. Substances**

Substance name : Tin  
CAS-No. : 7440-31-5  
EC-No. : 231-141-8

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Tin	(CAS-No.) 7440-31-5 (EC-No.) 231-141-8 (REACH-no) 01-2119486474-28-XXXX	> 99	Not classified

Full text of H-statements: see section 16

### **3.2. Mixtures**

Not applicable

## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

Additional advice : First aider: Pay attention to self-protection. See also section 8 . Never give anything by mouth to an unconscious person. Show this safety data sheet to the doctor in attendance. Treat symptomatically. In case of doubt or persistent symptoms, consult always a physician.

Inhalation : Keep at rest. Provide fresh air. In case of doubt or persistent symptoms, consult always a physician.

Skin contact : Wash off with soap and water. In case of doubt or persistent symptoms, consult always a physician.

Eyes contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion : Rinse mouth. Do NOT induce vomiting. Call a physician immediately.

### **4.2. 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 : Contact with hot product will cause thermal burns. No adverse effects are expected. Contact with dust may cause mechanical irritation or drying of the skin.

Eyes contact : No adverse effects are expected. Contact with hot product will cause thermal burns. Dust may cause painful eye irritation and tearing.

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


### **4.3. Indication of any immediate medical attention and special treatment needed**

Not applicable.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

Suitable extinguishing media : Water spray, Alcohol resistant foam, Carbon dioxide, Dry extinguishing powder.

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Unsuitable extinguishing media : Strong water jet.

**5.2. Special hazards arising from the substance or mixture**

Specific hazards : Evacuate personnel to a safe area. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Hazardous decomposition products SnOx.

**5.3. Advice for firefighters**

Firefighting instructions : Special protective equipment for firefighters. In case of fire: Wear self-contained breathing apparatus. Use water spray or fog for cooling exposed containers.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**6.1.1. For non-emergency personnel**

For non-emergency personnel : Provide adequate ventilation. Evacuate personnel to a safe area. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Avoid contact with skin, eyes and clothing. Do not breathe dust. Do not breathe fumes. Avoid dust formation.

**6.1.2. For emergency responders**

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

**6.3. Methods and material for containment and cleaning up**

Methods for cleaning up : Take up mechanically and collect in suitable container for disposal. Dispose of contaminated materials in accordance with current regulations.

**6.4. Reference to other sections**

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Precautions for safe handling : Provide adequate ventilation. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Avoid contact with skin, eyes and clothing. Do not breathe dust. Do not breathe fumes. After use replace the closing cap immediately. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Take any precaution to avoid mixing with Incompatible materials. See also section 10. Do not allow to enter into surface water or drains.

Hygiene measures : Wash hands and face before breaks and immediately after handling of the product. Keep away from food, drink and animal feedingstuffs. When using do not eat, drink or smoke. Wash contaminated clothing before reuse.

**7.2. Conditions for safe storage, including any incompatibilities**

Technical measures : Keep container tightly closed in a cool, well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10.


Packaging materials : Keep only in the original container.

**7.3. Specific end use(s)**

No data available

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**


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<b>Tin (7440-31-5)</b>		
Austria	MAK (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (inhalable fraction)
Austria	MAK Short time value (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup> (inhalable fraction)
Belgium	Limit value (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup> 2 mg/m <sup>3</sup>
Croatia	GVI (granična vrijednost izloženosti) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Cyprus	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Greece	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Ireland	OEL (15 min ref) (mg/m <sup>3</sup> )	6 mg/m <sup>3</sup> (calculated)
Malta	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Poland	NDS (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (inhalable fraction)
Portugal	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Slovenia	OEL TWA (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup> (inhalable fraction) 2 mg/m <sup>3</sup>
Spain	VLA-ED (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (inhalable dust)
Australia	TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
USA - ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
USA - IDLH	US IDLH (mg/m <sup>3</sup> )	100 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>

<b>Tin (7440-31-5)</b>	
<b>DNEL/DMEL (workers)</b>	
Acute - systemic effects, dermal	133,3 mg/kg bodyweight/day
Acute - systemic effects, inhalation	11,75 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	133,3 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	11,75 mg/m <sup>3</sup>
<b>DNEL/DMEL (general population)</b>	
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

## 8.2. Exposure controls

- Engineering measure(s) : Avoid dust formation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Organisational measures to prevent /limit releases, dispersion and exposure. See also section 7.
- Personal protective equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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Hand protection	: Wear chemically resistant gloves (tested to EN374) . Recommended material: NBR (Nitrile rubber), Polyethylene. The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.
Eye protection	: tightly fitting safety goggles (EN 166)
Body protection	: Wear suitable protective clothing
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Half-face mask (DIN EN 140) (EN 140). full face mask (DIN EN 136) (EN 136). Filter type: P (EN 143)
Thermal hazard protection	: Not required for normal conditions of use. Molten form : Protective gloves against thermal risks (EN 407). Protective clothing. (Heat-resistant).


## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid.
Colour	: White.
Odour	: odourless.
Odour threshold	: No data available
pH	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Melting / freezing point	: 231,9 °C
Freezing point	: No data available
Initial boiling point and boiling range	: 2507 °C
Flash point	: study scientifically unjustified
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable
Vapour pressure	: 1 Pa @ 1224 °C
Vapour density	: No data available
Relative density	: 7,31 g/cm <sup>3</sup> @ 20 °C
Density	: study scientifically unjustified
Solubility	: study scientifically unjustified. Water: 0,004 mg/l @ 20 °C
Partition coefficient n-octanol/water	: No data available
Kinematic viscosity	: No data available
Dynamic viscosity	: No data available
Explosive properties	: The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	: The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	: Not applicable

### 9.2. Other information

No data available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

None. Reference to other sections: 10.5.

#### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

#### 10.3. Possibility of hazardous reactions

Risk of violent reaction. : Chlorine (Cl<sub>2</sub>). Oxidising agent. Copper nitrate. Ammonium nitrate (< 200°C). Reference to other sections 10.5.

#### 10.4. Conditions to avoid

None under normal processing. See also section 7. Handling and storage.

#### 10.5. Incompatible materials

Strong acids. Oxidising agent. chlorine. Alkali. See also section 7. Handling and storage.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. Reference to other sections: 5.2.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

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/m <sup>3</sup>

Tin (7440-31-5)	
LD50/oral/rat	> 2000 mg/kg bodyweight
LD50/dermal/rat	> 2000 mg/kg bodyweight
LC50/inhalation/4h/rat	> 5 g/m <sup>3</sup>

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

Serious eye damage/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

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met.)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met.)

Tin (7440-31-5)	
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

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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.  
Reference to other sections: 4.2.

## SECTION 12: Ecological information

### 12.1. Toxicity

Environmental properties : 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	> 1000 mg/kg sediment dw Long-term toxicity of organisms living in the sediment
ErC50 (algae)	> 19,2 µg/L (72h)
LOEC (chronic)	200 µg/L Toxicity to aquatic invertebrates

### 12.2. Persistence and degradability

Tin (7440-31-5)	
Persistence and degradability	The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.3. Bioaccumulative potential

No data available

### 12.4. Mobility in soil

Tin (7440-31-5)	
Ecology - soil	Log Kd 2.1 - 1.3 L/kg.

Tin (7440-31-5)	
Ecology - soil	Log Kd 2.1 - 1.3 L/kg.

### 12.5. Results of PBT and vPvB assessment

No data available

### 12.6. Other adverse effects

No data available

## SECTION 13: Disposal considerations


### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Refer to manufacturer/supplier for information on recovery/recycling. Dispose of contaminated materials in accordance with current regulations.

Additional information : If recycling is not practicable, dispose of in compliance with local regulations.

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

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : Waste codes should be assigned by the user based on the application for which the product was used.

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### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
NA	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>				
NA	Not applicable	Not applicable	Not applicable	Not applicable
<b>Transport document description</b>				
UN NA NA				
<b>14.3. Transport hazard class(es)</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
Not applicable				

#### 14.6. Special precautions for user

Special precautions for user : Not applicable

#### - Overland transport

No data available

#### - Transport by sea

No data available

#### - Air transport

No data available

#### - Inland waterway transport

No data available

#### - Rail transport

No data available

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Code: IBC : Not applicable.

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture


##### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Tin is not on the REACH Candidate List

Tin is not on the REACH Annex XIV List



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### 15.1.2. National regulations

#### Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

#### Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

### 15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out

## SECTION 16: Other information

Indication of changes:


1		Modified	
15		Modified	
16		Modified	

Abbreviations and acronyms:

ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods Code
LEL = Lower Explosive Limit/Lower Explosion Limit
UEL = Upper Explosive Limit/Upper Explosive Limit
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
EC50 = Median Effective Concentration
LC50 = Median lethal concentration
LD50 = Median lethal dose
TLV = Threshold limits
TWA = time weighted average
STEL = Short term exposure limit
persistent, bioaccumulating and toxic (PBT).
vPvB = very persistent and very bioaccumulating
WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the datasheet : <http://esis.jrc.ec.europa.eu/> CSR.

According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Classification according to Regulation (EC) No. 1272/2008 [CLP]

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Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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