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Safety Data Sheet

1. Chemical product and company identification

Product name : Tin, Mossy

Company information

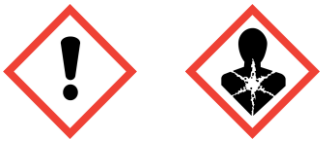
Name of manufacturer : KANTO CHEMICAL CO., INC.
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section : Business Administration Department, Reagent Division
Telephone number : +81-3-6214-1090
Facsimile number : +81-3-3241-1047
Mail address : BC32@kanto.co.jp
Reference No : 40159
Recommended use : For research use only
Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Health hazards	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
	Specific target organ toxicity (repeated exposure)	Category 1 (lung)

Hazard pictograms



Signal word : Danger

Hazard statements : Causes serious eye irritation
May cause respiratory irritation
Causes damage to organs (lung) through prolonged or repeated exposure

Precautionary statements

Prevention : Do not breathe dust.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor if you feel unwell.
Get medical advice/attention if you feel unwell.

If eye irritation persists: Get medical advice/attention.

Storage : Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Tin	100	Sn	Listed	231-141-8	7440-31-5

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.

First-aid measures after skin contact : Wash the affected areas under running water.

First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.

First-aid measures after ingestion : Give the victim water or salt water and make him vomit. Get medical attention.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

Most Important Symptoms/Effects

Symptoms/effects : Inhalation of tin dust may cause irritation of lung, upper respiratory tract.

5. Fire fighting measures

Suitable extinguishing media : This product is noncombustible.

Unsuitable extinguishing media : None

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate people downwind.

Environmental precautions

Environmental precautions	:	Attention should be given to avoid damage to the environment by flowing of spillage to rivers.

Methods and Equipment for Containment and Cleaning up

For containment	:	Sweep up the chemical and place in a chemical waste container.

7. Handling and storage

Handling

Technical measures	:	Wear appropriate protective equipment to avoid contact with skin or inhalation of dust.
Precautions for safe handling	:	Avoid formation of dust and aerosols.

Storage

Storage conditions	:	Store in a dark, cool place and tightly closed.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	2 mg/m³ (as Sn)

Appropriate engineering controls	:	Install a local ventilation system in case of dusty condition.

Protective equipment

Respiratory protection	:	If necessary, wear dust mask
Hand protection	:	Impervious protective gloves
Eye protection	:	Safety goggles
Skin and body protection	:	Protective clothing, protective boots

9. Physical and chemical properties

Physical state	:	Solid
Color	:	Silver
Odor	:	Odorless
pH	:	No data available
Melting point	:	231.9 ° C
Freezing point	:	No data available
Boiling point	:	2270 ° C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Non flammable.
Vapor pressure	:	0.001 Pa (537.8℃)
Relative density	:	7.31
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Water: Insoluble.
Partition coefficient n-octanol/water (log Pow)	:	No data available

Explosive limits (vol %)	:	No data available
Viscosity, kinematic	:	No data available
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	Soluble in acid. Concentrated nitric acid produces insoluble metastannic acid. Dissolves in alkaline hydroxide solution to produce stannite ions.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	It reacts violently with halogens to produce tetrachloride.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Acuds, alkaline substances, oxidizing substances.
Hazardous decomposition products	:	Tin oxides.

11. Toxicological information

Acute toxicity (oral)	:	Classification not possible
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) No classification (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	No classification A patch test of 73 nickel-sensitive patients with this substance (tin metal) or other subjects with this substance or 1% tin (II) chloride in petrolatum showed no apparent irritant response.
Serious eye damage/irritation	:	Causes serious eye irritation Based on the description that the dust of this substance irritates the eyes and respiratory tract, it was classified into category 2A.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible Although there is the following data, there is not enough data for classification, and it was classified as "Classification not possible". A patch test of metallic tin in 73 nickel-sensitive patients revealed that 6 had a positive allergic skin reaction (4 had a suspicious reaction). A patch test of 50 pottery craftsmen with 2.5% metallic tin dispersed in petrolatum showed that one was positive.
Germ cell mutagenicity	:	Classification not possible There is no in vivo data. As for in vitro, there are negative data on reverse mutation test in bacteria, chromosome aberration test and gene mutation examination in cultured mammalian cells.
Carcinogenicity	:	Classification not possible
Reproductive toxicity	:	Classification not possible Only limited data have been confirmed regarding the reproductive and developmental toxicity of inorganic tin compounds. No adverse effects were observed with rats fed with tin for three generations, or with some tin compounds fed throughout pregnancy. Similarly, repeated oral doses of tin(Ⅱ) chloride to pregnant rats, mice and hamsters had no adverse effects on the foetation.
STOT-single exposure	:	May cause respiratory irritation Based on the description that the dust of this substance irritates the eyes and respiratory tract, it was classified into category 3 (respiratory tract irritation).

STOT-repeated exposure	:	Causes damage to organs (lung) through prolonged or repeated exposure Inhalation exposure to tin (oxide) dust and fume is known to cause tin pneumoconiosis (mild pneumoconiosis). At ACGIH, in order to prevent tin pneumonia, the allowable working environment concentration for metallic tin, tin oxide and inorganic tin compounds (excluding tin hydroxide and indium tin oxide) (TLV-TWA = 2mg / m3 as inhalable particulate matter) is recommended. Based on the above, inhalation exposure of metallic tin and inorganic tin compounds may affect the human lungs, so it was classified into category 1 (lung).
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Classification not possible
Aquatic chronic	:	Classification not possible

Persistence and degradability

No additional information available

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Bury in a landfill site approved for the disposal of chemical and hazardous wastes. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	:	Not applicable
Proper Shipping Name (IMDG)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Transport hazard class(es) (IMDG)	:	Not applicable

Air transport(IATA)

UN-No. (IATA)	:	Not applicable
Proper Shipping Name (IATA)	:	Not applicable
Packing group (IATA)	:	Not applicable
Transport hazard class(es) (IATA)	:	Not applicable
Marine pollutant	:	Not applicable

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
Handbook of dangeroous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.