Material Safety Data Sheet
Tetramethyltin

Section 1 - Product Identification

Synonyms	:	Tetramethylstannane.
Chemical Formula	:	$C_4H_{12}Sn$
Company Identification	:	Tradeasia International Pte. Limited
Address	:	133 Cecil Street # 12-03 Keck Seng Tower, Singapore Tel: +65-6227 6365 Fax: +65-6225 6286 Email: contact@chemtradeasia.com
Recommended use	:	Laboratory chemicals, Manufacture of substances

Section 2 – Hazards Identification

2.1 Classification
Classification according to Regulation (EC) No 1272/2008
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 2), H300
Acute toxicity, Inhalation (Category 2), H330
Acute toxicity, Dermal (Category 1), H310
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

2.2 Label elements
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008
Signal Word Danger
Hazard Statements
H225 Highly flammable liquid and vapor.
H300 + H310 + H330 Fatal if swallowed, in contact with skin or if inhaled.
H410 Very toxic to aquatic life with long lasting effects.
Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not get in eyes, on skin, or on clothing
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Response

Get medical attention/advice if you feel unwell

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing immediately call a POISON CENTER or doctor/physician

Skin

Immediately call a POISON CENTER or doctor/physician
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth

Fire

In case of fire: Use CO2, dry chemical, or foam for extinction

Storage

Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

2.3 Other hazards

Very toxic to aquatic life with long lasting effects

Section 3 – Composition/Information on Ingredients

3.1 Composition comments

Synonyms : Tin tetramethyl
Formula : C4H12Sn
Molecular weight : 178,85 g/mol
CAS-No. : 594-27-4
EC-No. : 209-833-6
Index-No. : 050-005-00-7

Chemical Name	EC No/CAS No	Purity, %
tetramethyltin	594-27-4	max. 99.9

Section 4 – First-Aid Measures

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.
Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing: Causes central nervous system depression

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media
Dry powder Dry sand

5.2. Unsuitable extinguishing media
Do NOT use water jet.

5.3. Specific hazards arising from the chemical
Carbon oxides, Tin/tin oxides

5.4. Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7 – Handling and Storage

7.1. Precautions for safe Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.2. Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

Section 8 – Exposure Controls/Personal Protection

8.1. Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.2. Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid
Appearance: Colorless
Odor: No information available
Odor Threshold: No information available
pH: No information available
Melting Point/Range: -54 °C / -65.2 °F
Boiling Point/Range: 74 - 75 °C / 165.2 - 167 °F @ 760 mmHg
Flash Point: -12 °C / 10.4 °F
Evaporation Rate: No information available
Flammability (solid,gas): Not applicable

Flammability or explosive limits:

Upper: No data available
Lower: No data available
Vapor Pressure: No information available
Vapor Density: 6.16
Specific Gravity: 1.290
Solubility: Immiscible
Partition coefficient; n-octanol/water: No data available
Autoignition Temperature: No information available
Decomposition Temperature: No information available
Viscosity: No information available
Molecular Weight: 178.83

Section 10 – Stability and Reactivity

10.1. Reactivity
N.A

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
N.A.

10.4. Conditions to avoid:
Heat, flames and sparks.

10.5. Incompatible materials
acids, Strong oxidizing agents

10.6. Hazardous decomposition products
N.A.

Section 11 – Toxicological Information

11.1 Health effects associated with ingredients
Acute toxicity
Acute toxicity estimate Oral - 5,1 mg/kg (Expert judgment)
Acute toxicity estimate Inhalation - 4 h - 0,051 mg/l (Expert judgment)
Acute toxicity estimate Dermal - 5,1 mg/kg (Expert judgment)
Skin corrosion/irritation
No data available
Serious eye damage/eye irritation
No data available
Respiratory or skin sensitization
No data available
Germ cell mutagenicity
No data available
Carcinogenicity
No data available
Reproductive toxicity
No data available
Specific target organ toxicity - single exposure
No data available
Specific target organ toxicity - repeated exposure
No data available

11.2. Additional Information
RTECS: WH8630000
Nausea, Headache, Vomiting, General signs of toxicity for overexposure to tetraalkyl tin compounds include muscular weakness and paralysis, leading to respiratory failure, tremors, convulsive movements, closure of the eyelids, and photophobia. Histologically, tetraalkyl tin compounds show a decrease in cytoplasmic basophilia of the liver, chromatolysis of the Purkinje cells of the cerebellum, and increase in the water content of the brain and spinal cord.

Section 12 – Ecological Information

12.1.Toxicity
Toxicity to fish LC50 - Oryzias latipes - 6,44 mg/l - 48,0 h
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 40 mg/l - 24 h
Toxicity to algae Growth inhibition EC50 - Skeletonema costatum - > 0,5 mg/l - 72 h

12.2. Bioaccumulative potential
N.A.

12.3. Mobility in soil
N.A.

12.4. Other adverse effects
Very toxic to aquatic life with long lasting effects.

Section 13 – Disposal Considerations

13.1. Disposal methods
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Section 14 – Transport Information

14.1 UN number
ADR/RID: 3384 IMDG: 3384 IATA: 3384

14.2 UN proper shipping name
ADR/RID: TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (tetramethyltin)
IMDG: TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (tetramethyltin)
IATA: Toxic by inhalation liquid, flammable, n.o.s. (tetramethyltin)
Passenger Aircraft: Not permitted for transport
Cargo Aircraft: Not permitted for transport

14.3 Transport hazard class(es)
ADR/RID: 6.1 (3) IMDG: 6.1 (3) IATA: 6.1 (3)

14.4 Packaging group
ADR/RID: I IMDG: I IATA: -

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
No data available

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Authorisations and/or restrictions on use
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : tetramethyltin
National legislation
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : ACUTE TOXIC : FLAMMABLE LIQUIDS : ENVIRONMENTAL HAZARDS

Section 16 : Additional Information

16.1. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List

16.2. List of relevant hazard statements and precautionary statements used in this MSDS
Hazard Statement
H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed
Precautionary Statements
Prevention
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash eyes thoroughly after handling.

P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response
P308 + P313: If exposed or concerned: get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.
Storage
P405: Store locked up.
Disposal
P501: Dispose of contents/container to in accordance with local regulations.

16.3. References

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2. Denton SM (1996). Acute oral toxicity study in the rat: anhydrous boric acid. Final report. Report no.: 1341/7-1032.
3. National Toxicology Program (NTP) – Technical Report Series No. TR324, NIH Publication No. 88 2580 (1987), PB88 213475/XAB
4. Fail et al., Fund. Appl. Toxicol. (1991) 17, 225-239
5. Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277
6. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
7. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
8. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)
9. Hansveit and Oldersma, 2000; TNO Nutrition and Food Research Institute. Report No. V99.157.
10. Gersich, FM (1984a). Environ.Toxicol.Chem., 3 #1, 89-94 (1984)
11. Soucek et al., 2010. Illinois Natural History Survey, University of Illinois.
For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.4. Disclaimer of Liability

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