

SECTION 1: Identification

1.1. Identification

Product name	: TETRAETHYL TIN
Product code	: SNT7270
Product form	: Substance
Physical state	: Liquid
Formula	: C ₈ H ₂₀ Sn
Synonyms	: TETRAETHYLSTANNANE
Chemical family	: ORGANOTIN

1.2. Recommended use and restrictions on use

Recommended use	: Chemical intermediate
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1.3. Supplier

GELEST, INC.

11 East Steel Road
Morrisville, PA 19067
USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number	: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 3	H226 Flammable liquid and vapor
Acute toxicity (oral) Category 2	H300 Fatal if swallowed
Hazardous to the aquatic environment - Acute Hazard Category 1	H400 Very toxic to aquatic life

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : H226 - Flammable liquid and vapor
H300 - Fatal if swallowed
H400 - Very toxic to aquatic life

Precautionary statements (GHS US) :

- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P210 - Keep away from heat, open flames, sparks. - No smoking.
- P233 - Keep container tightly closed.
- P240 - Ground/Bond container and receiving equipment.
- P241 - Use explosion-proof electrical equipment.
- P242 - Use only non-sparking tools.
- P243 - Take precautionary measures against static discharge.
- P264 - Wash hands thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P273 - Avoid release to the environment.
- P330 - Rinse mouth.
- P301+P310 - If swallowed: Immediately call a doctor.
- P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
- P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish.
- P391 - Collect spillage.
- P403+P235 - Keep in a cool place
- P405 - Store locked up.
- P501 - Dispose of contents/container to licensed waste disposal facility.

Safety Data Sheet

2.3. Hazards not otherwise classified (HNOC)

2.4. Unknown acute toxicity (GHS US)

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : TETRAETHYL TIN
CAS-No. : 597-64-8

Name	Product identifier	%	GHS US classification
Tetraethyltin	(CAS-No.) 597-64-8	95 – 100	Flam. Liq. 3, H226 Acute Tox. 2 (Oral), H300 Aquatic Acute 1, H400

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash with plenty of soap and water. Get medical advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : At low levels exposure to tetraethyltin may produce coughing, headache and nausea. Tetraethyltin has been reported to cause bradycardia, hypertension, nausea, vomiting, irritation of upper and lower respiratory systems, abrupt variation in sinus rhythm and short term memory loss. At higher levels tetraethyltin has been reported to cause damage to brain cells in the limbic system. At higher levels tetraethyltin has been reported to cause damage to brain cells in the limbic system.

Symptoms/effects after skin contact : May cause skin irritation. Organotins may be absorbed through the skin.

Symptoms/effects after eye contact : May cause eye irritation.

Symptoms/effects after ingestion : Fatal if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Immediate medical attention and special treatment, if necessary

Note to physician: Application of corticosteroid creams has been effective in treating severe skin irritation. If blisters develop, they may require abrasion to promote healing.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Foam. Carbon dioxide. Dry chemical.

5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapor. Toxic fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

Other information : Evacuate area in case of release. Highly toxic by inhalation. Self-contained breathing apparatus should be worn at all times to avoid inhalation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges.

Safety Data Sheet

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors. Containers must be properly grounded before beginning transfer. Take precautionary measures against static discharge. Use only non-sparking tools.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.

Storage conditions : Keep container tightly closed. Store in sealed containers in a manner consistent with safe-handling and regulatory requirements for a hazardous substance.

Incompatible materials : Direct sunlight. Oxidizing agent. Tin IV chloride.

Storage area : Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Tetraethyltin (597-64-8)

ACGIH	ACGIH OEL TWA	0.1 mg/m ³ as tin
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8.2. Appropriate engineering controls

Appropriate engineering controls : Provide local exhaust or general room ventilation. Insure that exhaust is vented properly-caustic scrubbing is recommended. Handle in an enclosing hood with exhaust ventilation.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Clear liquid.

Molecular mass : 234.94 g/mol

Safety Data Sheet

Color	: Colorless.
Odor	: No data available
Odor threshold	: No data available
Refractive index	: 1.4725
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: < 1
Melting point	: No data available
Freezing point	: -112 °C
Boiling point	: 181 °C
Flash point	: 53 °C TCC
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable liquid and vapor
Vapor pressure	: 1 mm Hg @ 33 °C
Relative vapor density at 20 °C	: > 1
Relative density	: 1.187
% Volatiles	: 100 %
Solubility	: Insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Direct sunlight causes slow degradation to an inorganic tin salt. Avoid contact with tin IV chloride as highly toxic triethylchlorotin may form.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Direct sunlight. Oxidizing agent. Tin IV chloride.

10.6. Hazardous decomposition products

Organic acid vapors. Tin oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Fatal if swallowed.

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

(597-64-8)

ATE US (oral)	9.474 mg/kg body weight
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Tetraethyltin (597-64-8)

LD50 oral rat	9 – 16 mg/kg
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LD50 oral mouse	39.8 mg/kg
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ATE US (oral)	9 mg/kg body weight
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Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Safety Data Sheet

Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: At low levels exposure to tetraethyltin may produce coughing, headache and nausea. Tetraethyltin has been reported to cause bradycardia, hypertension, nausea, vomiting, irritation of upper and lower respiratory systems, abrupt variation in sinus rhythm and short term memory loss. At higher levels tetraethyltin has been reported to cause damage to brain cells in the limbic system. At higher levels tetraethyltin has been reported to cause damage to brain cells in the limbic system.
Symptoms/effects after skin contact	: May cause skin irritation. Organotins may be absorbed through the skin.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: Fatal if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

Tetraethyltin (597-64-8)

LC50 - Fish [1]	0.00958 – 0.0125 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects	: This substance may be hazardous to the environment.
Effect on the ozone layer	: No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT)	: 2788
DOT NA No	UN2788

14.2. UN proper shipping name

Transport document description (DOT)	: UN2788 Organotin compounds, liquid, n.o.s. (TETRAETHYLtin), 6.1, II
Proper Shipping Name (DOT)	: Organotin compounds, liquid, n.o.s. (TETRAETHYLtin)
Class (DOT)	: 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
Packing group (DOT)	: II - Medium Danger
Hazard labels (DOT)	: 6.1 - Poison



Dangerous for the environment	Yes
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Marine pollutant : Yes



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243
DOT Packaging Exceptions (49 CFR 173.xxx) : 153

14.3. Additional information

Emergency Response Guide (ERG) Number : 153

Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 5 L
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 60 L
CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

Tetraethyltin (597-64-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the United States SARA Section 302

SARA Section 302 Threshold Planning Quantity (TPQ)	100
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15.2. International regulations

CANADA

Tetraethyltin (597-64-8)

Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations

Tetraethyltin (597-64-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Tetraethyltin (597-64-8)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Tetraethyltin (597-64-8)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases::

H226

Flammable liquid and vapor

Safety Data Sheet

H300	Fatal if swallowed
H400	Very toxic to aquatic life

Abbreviations and acronyms : Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor.

Hazard Rating

Health : 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

Flammability : 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.

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SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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