

SECTION 1: Identification

1.1. Identification

Product name	: DI-n-BUTYLDILAURYLIN, tech-95
Product code	: SND3260
Product form	: Substance
Physical state	: Liquid
Formula	: C32H64O4Sn
Synonyms	: DIBUTYLINDILAUROATE DIBUTYLBIS(LAUROATO)TIN DIBUTYLTIN DIDODECANOATE DIBUTYLBIS(LAUROYLOXY)TIN DIBUTYLTIN N-DODECANOATE DIBUTYLSTANNYLENE DILAUROATE DIBUTYLBIS(1-OXODODECYLOXY)STANNANE DODECANOIC ACID, 1,1'-(DIBUTYLSTANNYLENE) ESTER
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

Skin corrosion/irritation Category 2	H315 Causes skin irritation
Serious eye damage/eye irritation Category 2	H319 Causes serious eye irritation
Skin sensitization, Category 1	H317 May cause an allergic skin reaction
Germ cell mutagenicity Category 2	H341 Suspected of causing genetic defects
Reproductive toxicity Category 1B	H360 May damage fertility or the unborn child
Specific target organ toxicity (single exposure) Category 1	H370 Causes damage to organs
Specific target organ toxicity (repeated exposure) Category 1	H372 Causes damage to organs through prolonged or repeated exposure
Hazardous to the aquatic environment - Acute Hazard Category 1	H400 Very toxic to aquatic life
Hazardous to the aquatic environment - Chronic Hazard Category 1	H410 Very toxic to aquatic life with long lasting effects

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) : H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS US) : P201 - Obtain special instructions before use.

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P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P260 - Do not breathe vapors.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P302+P352 - If on skin: Wash with plenty of water.
P333+P313 - If skin irritation or rash occurs: 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.
P321 - Specific treatment (see first aid instructions on this label).
P314 - Get medical advice/attention if you feel unwell.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container to licensed waste disposal facility.

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 : DI-n-BUTYLDILAURYLtin
CAS-No. : 77-58-7

Name	Product identifier	%	GHS US classification
Di-n-butylidilauryltin	(CAS-No.) 77-58-7	90 – 100	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317 Muta. 2, H341 Repr. 1B, H360 STOT SE 1, H370 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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 : Rinse mouth. Never give anything by mouth to an unconscious person. Get medical advice/attention.

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

Symptoms/effects : Causes damage to organs through prolonged or repeated exposure. Causes damage to organs. May damage fertility or the unborn child. Suspected of causing genetic defects.

Symptoms/effects after inhalation : May be harmful if inhaled. May cause irritation to the respiratory tract. Overexposure may cause: Coughing. Headache. Nausea.

Symptoms/effects after skin contact : May cause an allergic skin reaction. Causes skin irritation. May be harmful in contact with skin. Organotins may be absorbed through the skin.

Symptoms/effects after eye contact : Causes serious eye irritation.

Symptoms/effects after ingestion : May be harmful if swallowed.

Chronic symptoms : Causes damage to thymus.

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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.
Unsuitable extinguishing media : Do not use straight streams.

5.2. Specific hazards arising from the chemical

Fire hazard : Irritating 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 : Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. 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

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up : Collect spillage. Clean up any spills as soon as possible, using an absorbent material to collect it.

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 : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all eye and skin contact and do not breathe vapor and mist. Use only in well ventilated areas.
Hygiene measures : Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store locked up.
Incompatible materials : Bases. Direct sunlight. Moisture. Reducing agents. Water.
Storage area : Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Di-n-butylidilauryltin (77-58-7)		
ACGIH	ACGIH OEL TWA	0.1 mg/m ³ as tin
ACGIH	ACGIH OEL STEL	0.2 mg/m ³ as tin
OSHA	OSHA PEL (TWA) [1]	0.1 mg/m ³ as tin
IDLH	IDLH	25 mg/m ³ (except Cyhexatin)
NIOSH	NIOSH REL (TWA)	0.1 mg/m ³ (except Cyhexatin)

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8.2. Appropriate engineering controls

Appropriate engineering controls : Provide local exhaust or general room 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:

When exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - gas (yellow cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Viscous liquid.
Molecular mass	: 631.55 g/mol
Color	: Straw to pale yellow.
Odor	: Characteristic.
Odor threshold	: No data available
Refractive index	: 1.4708
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 22 – 24 °C
Freezing point	: No data available
Boiling point	: > 200 °C @ 1 mm Hg
Flash point	: 231 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0.1 mm Hg
Relative vapor density at 20 °C	: No data available
Relative density	: 1.066
% Volatiles	: < 5 %
Solubility	: Insoluble in water. Reacts slowly with water. Organic solvent: Soluble: benzene, acetone, ether
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: 31 – 34 cSt @ 25°C
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

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10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Reacts with moisture in air and water, slowly releasing butanol and dibutyltin oxide. Direct sunlight causes slow degradation to an inorganic tin salt.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Bases. Direct sunlight. Moisture. Reducing agents. Water.

10.6. Hazardous decomposition products

Organic acid vapors. Tin oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Di-n-butylidilauryltin (77-58-7)	
LD50 oral rat	> 2000 mg/kg 175-1600 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Skin corrosion/irritation	: Causes skin irritation. Skin Irritation - rabbit: 500 mg: severe irritation effect RTECS Number: WH7000000
Serious eye damage/irritation	: Causes serious eye irritation. Eye Irritation - rabbit: 100 mg /24H: moderate irritation effect
Respiratory or skin sensitization	: May cause an allergic skin reaction. Maximisation Test - Guinea pig
Germ cell mutagenicity	: Suspected of causing genetic defects. In vitro tests showed mutagenic effects. Result: Positive results were obtained in some in vitro tests.
Carcinogenicity	: Not classified None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
Reproductive toxicity	: May damage fertility or the unborn child. May cause birth defects and reproductive effects based on animal data. orl-rat TDLo:50532 ug/kg(8D preg): Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Musculoskeletal system.
STOT-single exposure	: Causes damage to organs.
STOT-repeated exposure	: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Ingestion is likely to be harmful or have adverse effects.
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause irritation to the respiratory tract. Overexposure may cause: Coughing. Headache. Nausea.
Symptoms/effects after skin contact	: May cause an allergic skin reaction. Causes skin irritation. May be harmful in contact with skin. Organotins may be absorbed through the skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.
Chronic symptoms	: Causes damage to thymus.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Di-n-butylidilauryltin (77-58-7)	
LC50 - Fish [1]	2 mg/l (Zebra Fish)
EC50 - Crustacea [1]	2.28 mg/l 1.9-3.8 mg/lkg Daphnia magna
LC50 - Fish [2]	1 mg/l (Orange red killifish (Oryzias latipes), 48 h)

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Di-n-butylidilauryltin (77-58-7)	
EC50 - Crustacea [2]	0.66 mg/l (Daphna magna (water flea))
ErC50 algae	1 mg/l (Scenedesmus subspicatus (algae))

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

Sewage disposal recommendations : Do not dispose of waste into sewer.
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) : 3082
DOT NA No UN3082

14.2. UN proper shipping name

Transport document description (DOT) : UN3082 Environmentally hazardous substances, liquid, n.o.s. (DI-n-BUTYLDILAURYLTIN), 9, III
Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s. (DI-n-BUTYLDILAURYLTIN)
Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Packing group (DOT) : III - Minor Danger
Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



Dangerous for the environment : Yes
Marine pollutant : Yes



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Packaging Exceptions (49 CFR 173.xxx) : 155
DOT Symbols : G - Identifies PSN requiring a technical name

14.3. Additional information

Emergency Response Guide (ERG) Number : 171
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.

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Air transport

DOT Quantity Limitations Passenger aircraft/rail : No limit
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : No limit
CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

Di-n-butylidilauryltin (77-58-7)

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

15.2. International regulations

CANADA

Di-n-butylidilauryltin (77-58-7)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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EU-Regulations

Di-n-butylidilauryltin (77-58-7)

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

National regulations

Di-n-butylidilauryltin (77-58-7)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

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

SECTION 16: Other information

Full text of H-phrases::

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H341	Suspected of causing genetic defects
H360	May damage fertility or the unborn child
H370	Causes damage to organs
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

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.

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Hazard Rating

- Health : 2 Moderate Hazard - Temporary or minor injury may occur
- Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
- Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

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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