

1,3-DI-n-BUTYL-1,1,3,3-TETRAMETHYLDISILAZANE

Safety Data Sheet

Date of issue: 06/16/2003

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Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Substance
 Physical state : Liquid
 Substance name : 1,3-DI-n-BUTYL-1,1,3,3-TETRAMETHYLDISILAZANE
 Product code : SID3349.0
 Formula : C₁₂H₃₁NSi₂
 Synonyms : BIS(BUTYLDIMETHYLSILYL)AMINE
 Chemical family : ORGANOSILANE

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

Use of the substance/mixture : Chemical intermediate
 For research use only

1.3. Details of the supplier of the safety data sheet**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)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification (GHS-US)**

Flam. Liq. 4 H227
 Skin Corr. 1A H314
 Eye Dam. 1 H318

Full text of H-phrases: see section 16

2.2. Label elements**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H227 - Combustible liquid
 H314 - Causes severe skin burns and eye damage
 H318 - Causes serious eye damage

Precautionary statements (GHS-US) :

P210 - Keep away from open flames, sparks, ignition sources. - No smoking
 P260 - Do not breathe vapors
 P264 - Wash hands, forearms and face thoroughly after handling
 P280 - Wear eye protection, face protection, protective clothing, protective gloves
 P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
 P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a doctor, a POISON CENTER
 P321 - Specific treatment (see first aid instructions on this label)
 P363 - Wash contaminated clothing before reuse
 P370+P378 - In case of fire: Use dry powder, foam, Water spray, sand to extinguish
 P403+P235 - Keep in a cool place
 P405 - Store locked up
 P501 - Dispose of contents/container to hazardous or special waste collection point, in

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accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Mono-constituent
Name : 1,3-DI-n-BUTYL-1,1,3,3-TETRAMETHYLDISILAZANE

| Name | Product identifier | % | Classification (GHS-US) |
|--|---------------------|----------|-------------------------|
| 1,3-DI-n-BUTYL-1,1,3,3-TETRAMETHYLDISILAZANE | (CAS No) 82356-80-7 | 60 - 100 | Skin Corr. 1A, H314 |

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If exposed or concerned: get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention. If breathing is difficult, supply oxygen. If breathing has stopped, give artificial respiration.

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. Get medical attention immediately.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Get medical attention immediately. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention immediately.

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

Symptoms/injuries after skin contact : Causes severe skin burns and eye damage.
Symptoms/injuries after eye contact : Causes serious eye damage.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Dry powder. Foam. Water fog. Water spray.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Liquid generates strong static charge when poured.
Explosion hazard : Product is not explosive.
Reactivity : Reacts with water.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment. Prevent human exposure to fire, fumes, smoke and products of combustion.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Keep upwind. Ventilate area. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

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 : Wear suitable protective clothing, gloves and eyes or face protection. For further information refer to section 8: "Exposure controls/personal protection".

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6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters. Avoid release to the environment.

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 : Soak up spills with inert absorbent solids as soon as possible. Place in a suitable container for disposal in accordance with the waste regulations (See Section 13).

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent accumulation of vapors. Do not breathe vapors. Keep away from sources of ignition - No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools.

7.2. Conditions for safe storage, including any incompatibilities

No additional information available

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

- Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.
- Personal protective equipment : Gloves. Protective goggles. Face shield. Protective clothing.
- Hand protection : Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Be aware that the chemical may penetrate the gloves. Frequent changes are advisable. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl.
- Eye protection : Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.
- Skin and body protection : Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
- Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Clear.
- Molecular mass : 245.55 g/mol
- Color : Colorless.
- Odor : Ammonia.
- Odor threshold : No data available
- Refractive index : 1.4353
- pH : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : No data available
- Freezing point : < 0 °C
- Boiling point : 81 °C @ 2mm Hg
- Flash point : 86 °C COC
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : < 1 mm Hg 20 °C
- Relative vapor density at 20 °C : > 1 (AIR = 1)

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| | |
|----------------------|--|
| Relative density | : 0.80 (WATER = 1) |
| Solubility | : Reacts with water. Insoluble in water. |
| Log Pow | : No data available |
| 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

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with water.

10.2. Chemical stability

Stable in sealed containers in a cool place.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating ammonia.

10.4. Conditions to avoid

Combustible. Heat. Sparks. Open flame.

10.5. Incompatible materials

Water. Peroxides. Oxidizing agent. Alcohols. Acids. Moisture.

10.6. Hazardous decomposition products

Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|--|--|
| Acute toxicity | : Not classified |
| Skin corrosion/irritation | : Causes severe skin burns and eye damage. |
| Serious eye damage/irritation | : Causes serious eye damage. |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : Not classified |
| Specific target organ toxicity (repeated exposure) | : Not classified |
| Aspiration hazard | : Not classified |
| Symptoms/injuries after skin contact | : Causes severe skin burns and eye damage. |
| Symptoms/injuries after eye contact | : Causes serious eye damage. |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No information available.

12.2. Persistence and degradability

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| | |
|-------------------------------|---------------------------|
| Persistence and degradability | No information available. |
|-------------------------------|---------------------------|

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available

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Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT) : 2924
DOT NA no. : UN2924

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Flammable liquids, corrosive, n.o.s.
Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT) : 3 - Flammable liquid
8 - Corrosive



DOT Symbols : G - Identifies PSN requiring a technical name
Packing group (DOT) : II - Medium Danger
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243

14.3. Additional information

Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 5 L

SECTION 15: Regulatory information

15.1. US Federal regulations

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| | |
|-------------------------------------|--|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard Reactive hazard |
|-------------------------------------|--|

15.2. International regulations

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CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.

15.3. US State regulations

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| | |
|---|----|
| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive | No |

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|---|---|---|---|-----------------------------------|
| Toxicity - Female | | | | |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | | No | | |
| 1,3-DI-n-BUTYL-1,1,3,3-TETRAMETHYLDISILAZANE (82356-80-7) | | | | |
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| No | No | No | No | |

SECTION 16: Other information

Full text of H-phrases::

| | |
|---------------|--|
| Eye Dam. 1 | Serious eye damage/eye irritation Category 1 |
| Flam. Liq. 4 | Flammable liquids Category 4 |
| Skin Corr. 1A | Skin corrosion/irritation Category 1A |
| H227 | Combustible liquid |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |

NFPA health hazard

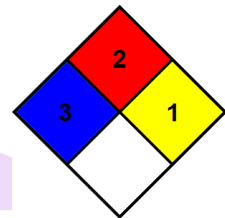
: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard

: 2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.

NFPA reactivity

: 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health

: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability

: 2 Moderate Hazard

Physical

: 1 Slight Hazard

Author: ANF.

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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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