GED3200 - DI-n-BUTYLDICHLOROGERMANE, 95%

DI-n-BUTYLDICHLOROGERMANE, 95%
Safety Data Sheet GED3200
Date of issue: 11/16/2015   Version: 1.0

SECTION 1: Identification

1.1. Identification
Product name: DI-n-BUTYLDICHLOROGERMANE, 95%
Product code: GED3200
Product form: Substance
Physical state: Liquid
Formula: C8H18Cl2Ge
Synonyms: DIBUTYLGERMANIUMDICHLORIDE; DIBUTYLDICHLOROGERMANE
Chemical family: ORGANOCHLOROGERMANE

1.2. Recommended use and restrictions on use
Recommended use: Chemical intermediate

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)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS-US classification
Acute toxicity (oral) Category 3 H301 - Toxic if swallowed
Skin corrosion/irritation Category 1B H314 - Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1 H318 - Causes serious eye damage
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): H301 - Toxic if swallowed
H314 - Causes severe skin burns and eye damage
Precautionary statements (GHS US):
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Do not breathe vapors.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
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
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
P321 - Specific treatment (see first aid instructions on this label)
P363 - Wash contaminated clothing before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Hazards not otherwise classified (HNOC)
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable
DI-n-BUTYLDICHLOROGERMANE, 95%

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Name: DI-n-BUTYLDICHLOROGERMANE, 95%
CAS-No.: 4593-81-1

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyldichlorogermane</td>
<td>(CAS-No.) 4593-81-1</td>
<td>90 - 100</td>
<td>Acute Tox. 3 (Oral), H301</td>
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<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1B, H314</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td>Other Organogermaniums</td>
<td></td>
<td>0 - 10</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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 immediate 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 immediate medical advice/attention.

First-aid measures after ingestion: 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 after inhalation: May cause irritation to the respiratory tract.

Symptoms/effects after skin contact: Causes (severe) skin burns.

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

Symptoms/effects after ingestion: Toxic 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

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


Unsuitable extinguishing media: Water.

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: 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.

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

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: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal.

6.4. **Reference to other sections**

See Heading 8. Exposure controls and personal protection.

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**SECTION 7: Handling and storage**

7.1. **Precautions for safe handling**

Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors.

Hygiene measures: 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**: Water.
- **Storage area**: Store in a well-ventilated place. Store away from heat.

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**SECTION 8: Exposure controls/personal protection**

8.1. **Control parameters**

No additional information available

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 or face shield. 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. NIOSH-certified combination organic vapor/acid gas (yellow cartridge) respirator.

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**SECTION 9: Physical and chemical properties**

9.1. **Information on basic physical and chemical properties**

**Physical state**: Liquid

**Appearance**: Colorless liquid.

**Molecular mass**: 257.73 g/mol

**Color**: No data available

**Odor**: No data available

**Odor threshold**: No data available

**Refractive index**: 1.4724

**pH**: No data available

**Relative evaporation rate (butyl acetate=1)**: No data available

**Melting point**: No data available

**Freezing point**: < 0 °C

**Boiling point**: 242 °C

**Flash point**: 107 °C

**Auto-ignition temperature**: No data available
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Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: < 5 mm Hg @ 20˚C
Relative vapor density at 20 ˚C: > 1
Relative density: 1.208
Solubility: 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
No additional information available

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Contact with water or moisture slowly generates hydrogen chloride.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>DI-n-BUTYLDICHLOROGERMANE, 95% (4593-81-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
</tr>
<tr>
<td>Dibutyldichlorogermane (4593-81-1)</td>
</tr>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LDLo intraperitoneal rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

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/effects after inhalation: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact: Causes (severe) skin burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.
Reason for classification: Expert judgment
**DI-n-BUTYLDICHLOROGERMANE, 95%**

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**SECTION 12: Ecological information**

12.1. **Toxicity**
No additional information available

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) : 2922
DOT NA no. : UN2922

14.2. **UN proper shipping name**
Transport document description : UN2922 Corrosive liquids, toxic, n.o.s. (DI-n-BUTYLDICHLOROGERMANE), 8 (6.1), II
Proper Shipping Name (DOT) : Corrosive liquids, toxic, n.o.s. (DI-n-BUTYLDICHLOROGERMANE)
Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT) : II - Medium Danger
Hazard labels (DOT) : 8 - Corrosive 6.1 - Poison

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243
DOT Packaging Exceptions (49 CFR 173.xxx) : 154
DOT Symbols : G - Identifies PSN requiring a technical name

14.3. **Additional information**
Emergency Response Guide (ERG) Number : 154
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) : 30 L
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SECTION 15: Regulatory information

15.1. US Federal regulations

Dibutyldichlorogermane (4593-81-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
No additional information available

Dibutyldichlorogermane (4593-81-1)
Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations
No additional information available

Dibutyldichlorogermane (4593-81-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations
No additional information available

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:

H301 Toxic if swallowed
H314 Causes severe skin burns and eye damage
H318 Causes serious eye damage

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

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

Flammability

2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

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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