SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Substance name</td>
<td>1,1,4,4-TETRAMETHYL-1,4-DISILABUTANE</td>
</tr>
<tr>
<td>Product code</td>
<td>SIT7537.0</td>
</tr>
<tr>
<td>Formula</td>
<td>C6H18Si2</td>
</tr>
<tr>
<td>Synonyms</td>
<td>1,2-BIS(DIMETHYLSILYL)ETHANE; 1,1,4,4-TETRAMETHYLDISILETHYLENE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOHYDROSILANE</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Classification (GHS-US)</th>
<th>Flam. Liq. 2 H225</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full text of H-phrases: see section 16</td>
<td></td>
</tr>
</tbody>
</table>

2.2. Label elements

| GHS-US labeling | Hazard pictograms (GHS-US): |

<table>
<thead>
<tr>
<th>Signal word (GHS-US)</th>
<th>Danger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard statements (GHS-US)</td>
<td>H225 - Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>Precautionary statements (GHS-US)</td>
<td>P280 - Wear protective gloves/protective clothing/eye protection/face protection</td>
</tr>
<tr>
<td></td>
<td>P210 - Keep away from heat, open flames, sparks. - No smoking</td>
</tr>
<tr>
<td></td>
<td>P233 - Keep container tightly closed</td>
</tr>
<tr>
<td></td>
<td>P240 - Ground/bond container and receiving equipment</td>
</tr>
<tr>
<td></td>
<td>P241 - Use explosion-proof electrical equipment</td>
</tr>
<tr>
<td></td>
<td>P242 - Use only non-sparking tools</td>
</tr>
<tr>
<td></td>
<td>P243 - Take precautionary measures against static discharge</td>
</tr>
<tr>
<td></td>
<td>P370+P378 - In case of fire: Use water spray or fog, foam, carbon dioxide, dry chemical to extinguish</td>
</tr>
<tr>
<td></td>
<td>P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower</td>
</tr>
<tr>
<td></td>
<td>P403+P235 - Keep in a cool place</td>
</tr>
<tr>
<td></td>
<td>P501 - Dispose of contents/container to licensed waste disposal facility</td>
</tr>
</tbody>
</table>

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available
1,1,4,4-TETRAMETHYL-1,4-DISILABUTANE
Safety Data Sheet

SECTION 3: Composition/information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,4,4-Tetramethyl-1,4-disilabutane</td>
<td>(CAS No) 20152-11-8</td>
<td>&gt; 95</td>
<td>Flam. Liq. 2, H225</td>
</tr>
</tbody>
</table>

3.2. Mixture
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 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.

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 medical advice/attention.

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

Symptoms/injuries after inhalation: No information available.

Symptoms/injuries after skin contact: May cause skin irritation.

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

Symptoms/injuries after ingestion: No information available.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media


5.2. Special hazards arising from the substance or mixture

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

Explosion hazard: May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. 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

General measures: Eliminate every possible source of ignition. Use special care to avoid static electric charges.

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.
1,1,4,4-TETRAMETHYL-1,4-DISILABUTANE
Safety Data Sheet

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed
Precautions for safe handling
Hygiene measures

7.2. Conditions for safe storage, including any incompatibilities

Technical measures
Storage conditions
Incompatible materials
Storage area

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
Personal protective equipment
Hand protection
Eye protection
Skin and body protection
Respiratory protection

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state
Appearance
Molecular mass
Color
Odor
Odor threshold
Refractive index
pH
Relative evaporation rate (butyl acetate=1)
Melting point
Freezing point
Boiling point
Flash point
Auto-ignition temperature
Decomposition temperature
Flammability (solid, gas)
Vapor pressure
Relative vapor density at 20 °C
Relative density
VOC content
Solubility
Log Pow
Log Kow
Viscosity, kinematic
Viscosity, dynamic
1,1,4,4-TETRAMETHYL-1,4-DISILABUTANE
Safety Data Sheet

Explosive properties : No data available
Oxidizing properties : No data available
Explosive 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 in sealed containers stored under a dry inert atmosphere.

10.3. Possibility of hazardous reactions
The product can generate small amounts of hydrogen when exposed to alkalis and protic materials such as water and alcohol in combination with metal salts such as aluminum chloride or precious metals such as platinum.

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
Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
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 inhalation : No information available.
Symptoms/injuries after skin contact : May cause skin irritation.
Symptoms/injuries after eye contact : May cause eye irritation.
Symptoms/injuries after ingestion : No information available.

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
Effect on ozone layer : No additional information available
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 : Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
# 1,1,4,4-TETRAMETHYL-1,4-DISILABUTANE
Security Data Sheet

## Additional information
- Handle empty containers with care because residual vapors are flammable.
- Avoid release to the environment.

## SECTION 14: Transport information

### 14.1. UN number
- **UN-No.(DOT):** 1993
- **DOT NA no.:** UN1993

### 14.2. UN proper shipping name
- **Proper Shipping Name (DOT):** Flammable liquids, 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

- **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):** 242

### 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.

## Air transport
- **DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27):** 5 L
- **DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75):** 60 L

## SECTION 15: Regulatory information

### 15.1. US Federal regulations
- **1,1,4,4-TETRAMETHYL-1,4-DISILABUTANE (20152-11-8):**
  - **TSCA Exemption/Exclusion:** CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA. 40 CFR 720.3f, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(hh). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.
  - **1,1,4,4-Tetramethyl-1,4-disilabutane (20152-11-8):** Not listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations
- No additional information available

### 15.3. US State regulations
- **1,1,4,4-TETRAMETHYL-1,4-DISILABUTANE(20152-11-8):**
  - **U.S. - California - Proposition 65 - Carcinogens List:** No
  - **U.S. - California - Proposition 65 - Developmental Toxicity:** No
  - **U.S. - California - Proposition 65 - Reproductive Toxicity - Female:** No
  - **U.S. - California - Proposition 65 - Reproductive Toxicity - Male:** No
1,1,4,4-TETRAMETHYL-1,4-DISILABUTANE
Safety Data Sheet

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

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.

Full text of H-phrases:

<table>
<thead>
<tr>
<th>Flam. Liq. 2</th>
<th>Flammable liquids Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
</tbody>
</table>

HMIS III Rating
- Health: 2 Moderate Hazard - Temporary or minor injury may occur
- Flammability: 4 Severe Hazard
- Physical: 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 12/22/2014   Version: 1.0

SDS US (GHS HazCom 2012) - Custom
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

© 2014 Gelest Inc. Morrisville, PA 19067