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

1.1. **Product identifier**
- **Product form**: Substance
- **Physical state**: Liquid
- **Substance name**: N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE
- **Product code**: SIM6501.4
- **Formula**: C7H17NSi
- **Synonyms**: 1,2,2,4-TETRAMETHYL-1-AZA-2-SILACYCLOPENTANE
- **Chemical family**: ORGANOSILANE

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

1.2.1. **Relevant identified uses**
- Use of the substance/mixture: Chemical intermediate

1.2.2. **Uses advised against**
- No additional information available

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

**GELEST INC.**
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 353510-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.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</th>
<th>H Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquids, Category 2</td>
<td>H225</td>
</tr>
<tr>
<td>Skin corrosion/irritation, Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation, Category 2</td>
<td>H319</td>
</tr>
<tr>
<td>Specific target organ toxicity — Single exposure, Category 3</td>
<td>H335</td>
</tr>
</tbody>
</table>

**Respiratory tract irritation**

Full text of H statements: see section 16

**Adverse physicochemical, human health and environmental effects**
- No additional information available

2.2. **Label elements**

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**
- **Hazard pictograms (CLP)**: ![GHS02](image), ![GHS07](image)
- **Signal word (CLP)**: Danger
Hazard statements (CLP) : H225 - Highly flammable liquid and vapour.  
H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 - Keep container tightly closed.  
P240 - Ground and bond container and receiving equipment.  
P241 - Use explosion-proof equipment.  
P261 - Avoid breathing vapours.  
P264 - Wash hands thoroughly after handling.

2.3. Other hazards  
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances  
Substance type : Mono-constituent  
Name : N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE  
CAS-No. : 18387-19-4

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Methyl-aza-2,2,4-trimethylsilacyclopentane</td>
<td>(CAS-No.) 18387-19-4</td>
<td>&gt; 95</td>
<td>Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Full text of 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 person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.  
First-aid measures after skin contact : Wash with plenty of 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 medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed  
Symptoms/effects after skin contact : Causes skin irritation.  
Symptoms/effects after eye contact : Causes serious eye irritation.  
Symptoms/effects after ingestion : May be harmful if swallowed.

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 vapour. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.  
Explosion hazard : May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters  
Firefighting instructions : Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.
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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 vapour 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.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Additional hazards when processed: Handle empty containers with care because residual vapours are flammable.
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapour and mist. Provide good ventilation in process area to prevent formation of vapour. Containers must be properly grounded before beginning transfer. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
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: Ground/bond container and receiving equipment. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions: Keep container tightly closed.
Incompatible materials: Acids, alcohols, Oxidizing agent, Peroxides, Moisture, Water.
Storage area: Store in a well-ventilated place. Store away from heat.

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 local exhaust or general room ventilation.

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:
NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.
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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>143.3 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Straw.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.4308</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>&lt; 0 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>137 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>14 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Highly flammable liquid and vapour.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 5 mm Hg @ 20°C</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.813</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&lt; 30 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Reacts with water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

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 when stored in sealed containers.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials


10.6. Hazardous decomposition products

Organic amine vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
# N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE

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**Reproductive toxicity:** Not classified

**STOT-single exposure:** May cause respiratory irritation.

**STOT-repeated exposure:** Not classified

**Aspiration hazard:** Not classified

**Symptoms/effects after inhalation:** May cause respiratory irritation. Overexposure may cause: Cough. Headache. Nausea.

**Symptoms/effects after skin contact:** Causes skin irritation.

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

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

**Reason for classification:** Expert judgment

### SECTION 12: Ecological information

**12.1. Toxicity**

Hazardous to the aquatic environment, short-term (acute): Not classified

Hazardous to the aquatic environment, long-term (chronic): Not classified

**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. Results of PBT and vPvB assessment**

No additional information available

**12.6. Other adverse effects**

Other adverse effects: This substance may be hazardous to the environment.

### SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

Product/Packaging disposal recommendations: May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

Additional information: Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials: Avoid release to the environment.

### SECTION 14: Transport information

**14.1. UN number**

In accordance with ADR / RID / IMDG / IATA / ADN

**14.1. UN number**

- **UN-No. (ADR):** 1993
- **UN-No. (IMDG):** 1993
- **UN-No. (IATA):** 1993
- **UN-No. (ADN):** 1993
- **UN-No. (RID):** 1993

**14.2. UN proper shipping name**

- **Proper Shipping Name (ADR):** FLAMMABLE LIQUID, N.O.S.
- **Proper Shipping Name (IMDG):** FLAMMABLE LIQUID, N.O.S.
- **Proper Shipping Name (IATA):** Flammable liquid, n.o.s.
- **Proper Shipping Name (ADN):** FLAMMABLE LIQUID, N.O.S.
- **Proper Shipping Name (RID):** FLAMMABLE LIQUID, N.O.S.
- **Transport document description (ADR):** UN 1993 FLAMMABLE LIQUID, N.O.S. (N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE), 3, II, (D/E)
- **Transport document description (IMDG):** UN 1993 FLAMMABLE LIQUID, N.O.S. (N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE), 3, II
- **Transport document description (IATA):** UN 1993 Flammable liquid, n.o.s. (N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE), 3, II
N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE
Safety Data Sheet

| Transport document description (ADN) | UN 1993 FLAMMABLE LIQUID, N.O.S. (N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE), 3, II |
| Transport document description (RID) | UN 1993 FLAMMABLE LIQUID, N.O.S. (N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE), 3, II |

### 14.3. Transport hazard class(es)

#### ADR
- Transport hazard class(es) (ADR): 3
- Danger labels (ADR): 3

#### IMDG
- Transport hazard class(es) (IMDG): 3
- Danger labels (IMDG): 3

#### IATA
- Transport hazard class(es) (IATA): 3
- Danger labels (IATA): 3

#### ADN
- Transport hazard class(es) (ADN): 3
- Danger labels (ADN): 3

#### RID
- Transport hazard class(es) (RID): 3
- Danger labels (RID): 3

### 14.4. Packing group

- Packing group (ADR): II
- Packing group (IMDG): II
- Packing group (IATA): II
- Packing group (ADN): II
- Packing group (RID): II
### 14.5. Environmental hazards

| Dangerous for the environment | : No |
| Marine pollutant | : No |
| Other information | : No supplementary information available |

### 14.6. Special precautions for user

#### - Overland transport

- Classification code (ADR) : F1
- Special provisions (ADR) : 274, 601, 640C
- Limited quantities (ADR) : 1 L
- Excepted quantities (ADR) : E2
- Packing instructions (ADR) : P001
- Mixed packing provisions (ADR) : MP19
- Portable tank and bulk container instructions (ADR) : T7
- Portable tank and bulk container special provisions (ADR) : TP1, TP8, TP28
- Tank code (ADR) : L1.5BN
- Vehicle for tank carriage : FL
- Transport category (ADR) : 2
- Special provisions for carriage - Operation (ADR) : S2, S20
- Hazard identification number (Kemler No.) : 33
- Orange plates : 

#### - Transport by sea

- Special provisions (IMDG) : 274
- Limited quantities (IMDG) : 1 L
- Excepted quantities (IMDG) : E2
- Packing instructions (IMDG) : P001
- IBC packing instructions (IMDG) : IBC02
- Tank instructions (IMDG) : T7
- Tank special provisions (IMDG) : TP1, TP8, TP28
- EmS-No. (Fire) : F-E
- EmS-No. (Spillage) : S-E
- Stowage category (IMDG) : B

#### - Air transport

- PCA Excepted quantities (IATA) : E2
- PCA Limited quantities (IATA) : Y341
- PCA limited quantity max net quantity (IATA) : 1L
- PCA packing instructions (IATA) : 353
- PCA max net quantity (IATA) : 5L
- CAO packing instructions (IATA) : 364
- CAO max net quantity (IATA) : 60L
- Special provisions (IATA) : A3
- ERG code (IATA) : 3H

#### - Inland waterway transport

- Classification code (ADN) : F1
- Special provisions (ADN) : 274, 601, 640C
- Limited quantities (ADN) : 1 L
- Excepted quantities (ADN) : E2
- Carriage permitted (ADN) : T
- Equipment required (ADN) : PP, EX, A
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Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

- Rail transport
Classification code (RID) : F1
Special provisions (RID) : 274, 601, 640C
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T7
Portable tank and bulk container special provisions (RID) : TP1, TP8, TP28
Tank codes for RID tanks (RID) : L1.5BN
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE7
Hazard identification number (RID) : 33

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE is not on the REACH Candidate List
N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE is not on the REACH Annex XIV List

% Volatiles : < 30%

15.1.2. National regulations

Germany
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-list van kankerverwekkende stoffen : The substance is not listed
SZW-list van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Class for fire hazard : Class I-1
Store unit : 1 liter
Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment
No additional information available

SECTION 16: Other information
N-METHYL-AZA-2,2,4-TRIMETHYLSILACYCLOPENTANE
Safety Data Sheet

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>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</th>
</tr>
</thead>
</table>

Other information:
Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H225 | Highly flammable liquid and vapour. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |

SDS EU (REACH Annex II) - Custom

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.

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