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>Solid</td>
</tr>
<tr>
<td>Substance name</td>
<td>t-BUTYLDIMETHYLCHLOROGERMANE</td>
</tr>
<tr>
<td>Product code</td>
<td>GEB1933</td>
</tr>
<tr>
<td>Formula</td>
<td>C6H15ClGe</td>
</tr>
<tr>
<td>Synonyms</td>
<td>CHLORODIMETHYL-t-BUTYLGERMANE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOCHLOROGERMANE</td>
</tr>
</tbody>
</table>

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 3535106-501 - (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

Classification according to Regulation (EC) No. 1272/2008 [CLP]

- Flammable solids, Category 2: H228
- Skin corrosion/irritation, Category 1B: H314
- Serious eye damage/eye irritation, Category 1: H318

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 | GHS05

Signal word (CLP): Danger

Hazard statements (CLP):
- H228 - Flammable solid.
- H314 - Causes severe skin burns and eye damage.
t-BUTYLDIMETHYLCHELOROGERMANE
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Precautionary statements (CLP):
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
P260 - Do not breathe dust.
P264 - Wash hands thoroughly after handling.
P310 - Immediately call a POISON CENTER or doctor/physician

EUH-statements:
EUH014 - Reacts violently with water.

SECTION 3: Composition/information on ingredients
3.1. Substances
Substance type: Mono-constituent
Name: t-BUTYLDIMETHYLCHLOROGERMANE
CAS-No.: 41879-34-9

<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>t-Butyldimethylchlorogermane</td>
<td>(CAS-No.) 41879-34-9</td>
<td>95 - 100</td>
<td>Flam. Sol. 2, H228 Skin Corr. 1B, H314 Eye Dam. 1, H316</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 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 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 if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects: Causes severe skin burns and eye damage.
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: 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
Unsuitable extinguishing media: Water.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Flammable solid. Iritating fumes of hydrogen chloride and organic acid vapors may develop when material is exposed to water or open flame.

5.3. Advice for firefighters
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 contact with skin and eyes. Do not breathe dust.
## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**General measures**: Eliminate ignition sources. Use special care to avoid static electric charges.

#### 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 product 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**: 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**: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Precautions for safe handling**: Avoid contact with skin and eyes. Do not breathe dust. Ground/bond container and receiving equipment. Avoid dust formation. Provide local exhaust or general room ventilation to minimize exposure to dust. Use only non-sparking tools.

**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

**Technical measures**: Use explosion-proof electrical equipment.

**Storage conditions**: Keep container tightly closed. Store locked up.

**Incompatible materials**: Alkalis. Oxidizing agent.

**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 or face shield. Chemical goggles. 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.
SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Solid.
Molecular mass : 195.24 g/mol
Colour : Translucent.
Odour : Acrid odor of camphor. Similar to hydrogen chloride.
Odour threshold : No data available
Refractive index : No additional information available
pH : No data available
Relative evaporation rate (butylacetate=1) : > 1
Melting point : 93 - 94 °C
Freezing point : No data available
Boiling point : 147 - 154 °C
Flash point : 34 °C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Flammable solid.
Vapour pressure : No data available
Relative vapour density at 20 °C : > 1
Relative density : < 1
% Volatiles : > 95 %
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
Oxidising 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
Reacts with water and moisture in air, liberating hydrogen chloride.

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

10.5. Incompatible materials
Alkalis. Oxidizing agent.

10.6. Hazardous decomposition products

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 sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
t-BUTYLDIMETHYLCHLOROGERMANE
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<table>
<thead>
<tr>
<th>Reproductive toxicity</th>
<th>Not classified</th>
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<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
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<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
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<tr>
<td>Symptoms/effects after inhalation</td>
<td>May cause irritation to the respiratory tract.</td>
</tr>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>Causes (severe) skin burns.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>Symptoms/effects after ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
<tr>
<td>Reason for classification</td>
<td>Expert judgment</td>
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### SECTION 12: Ecological information

**12.1. Toxicity**
- Acute aquatic toxicity: Not classified
- Chronic aquatic toxicity: 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**
- 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**
In accordance with ADR / RID / IMDG / IATA / ADN

| UN-No. (ADR) | 2921 |
| UN-No. (IMDG) | 2921 |
| UN-No. (IATA) | 2921 |
| UN-No. (ADN) | 2921 |
| UN-No. (RID) | 2921 |

**14.2. UN proper shipping name**
- Proper Shipping Name (ADR): CORROSIVE SOLID, FLAMMABLE, N.O.S.
- Proper Shipping Name (IMDG): CORROSIVE SOLID, FLAMMABLE, N.O.S.
- Proper Shipping Name (IATA): Corrosive solid, flammable, n.o.s.
- Proper Shipping Name (ADN): CORROSIVE SOLID, FLAMMABLE, N.O.S.
- Proper Shipping Name (RID): CORROSIVE SOLID, FLAMMABLE, N.O.S.
- Transport document description (ADR): UN 2921 CORROSIVE SOLID, FLAMMABLE, N.O.S. (t-BUTYLDIMETHYLCHLOROGERMANE), 8 (4.1), II, (E)
- Transport document description (IMDG): UN 2921 CORROSIVE SOLID, FLAMMABLE, N.O.S. (t-BUTYLDIMETHYLCHLOROGERMANE), 8 (4.1), II
- Transport document description (IATA): UN 2921 Corrosive solid, flammable, n.o.s. (t-BUTYLDIMETHYLCHLOROGERMANE), 8 (4.1), II
- Transport document description (ADN): UN 2921 CORROSIVE SOLID, FLAMMABLE, N.O.S. (t-BUTYLDIMETHYLCHLOROGERMANE), 8 (4.1), II
**t-BUTYLDIMETHYLCHLOROGERMANE**  
Safety Data Sheet

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<th>Transport document description (RID)</th>
<th>UN 2921 CORROSIVE SOLID, FLAMMABLE, N.O.S. (t-BUTYLDIMETHYLCHLOROGERMANE), 8 (4.1), II</th>
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**14.3. Transport hazard class(es)**

<table>
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<th>ADR</th>
<th>Transport hazard class(es) (ADR)</th>
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<td>8, 4.1</td>
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**IMDG**

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**IATA**

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<td>Hazard labels (IATA)</td>
<td>8, 4.1</td>
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**ADN**

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**RID**

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<td>Danger labels (RID)</td>
<td>8, 4.1</td>
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**14.4. Packing group**

<table>
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<td>Packing group (IATA)</td>
<td>II</td>
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<tr>
<td>Packing group (ADN)</td>
<td>II</td>
</tr>
<tr>
<td>Packing group (RID)</td>
<td>II</td>
</tr>
</tbody>
</table>

**14.5. Environmental hazards**

| Dangerous for the environment | No      |

Print date: 10/04/2019  
EN (English)  
SDS ID: GEB1933  
6/9
### t-BUTYLDIMETHYLCHLOROGERMANE

**Safety Data Sheet**

<table>
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<tr>
<th>Marine pollutant</th>
<th>No</th>
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<tbody>
<tr>
<td>Other information</td>
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#### 14.6. Special precautions for user

**- Overland transport**

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<th>CF2</th>
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<tbody>
<tr>
<td>Special provisions (ADR)</td>
<td>274</td>
</tr>
<tr>
<td>Limited quantities (ADR)</td>
<td>1kg</td>
</tr>
<tr>
<td>Excepted quantities (ADR)</td>
<td>E2</td>
</tr>
<tr>
<td>Packing instructions (ADR)</td>
<td>P002, IBC08</td>
</tr>
<tr>
<td>Mixed packing provisions (ADR)</td>
<td>MP10</td>
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<tr>
<td>Portable tank and bulk container instructions (ADR)</td>
<td>T3</td>
</tr>
<tr>
<td>Portable tank and bulk container special provisions (ADR)</td>
<td>TP33</td>
</tr>
<tr>
<td>Tank code (ADR)</td>
<td>SGAN, L4BN</td>
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<tr>
<td>Vehicle for tank carriage</td>
<td>AT</td>
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<tr>
<td>Transport category (ADR)</td>
<td>2</td>
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<tr>
<td>Special provisions for carriage - Packages (ADR)</td>
<td>V11</td>
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<tr>
<td>Hazard identification number (Kemler No.)</td>
<td>84</td>
</tr>
<tr>
<td>Orange plates</td>
<td></td>
</tr>
</tbody>
</table>

| Tunnel restriction code (ADR) | E |
| EAC code | 2X |

**- Transport by sea**

| Special provisions (IMDG) | 274 |
| Limited quantities (IMDG) | 1 kg |
| Excepted quantities (IMDG) | E2 |
| Packing instructions (IMDG) | P002 |
| IBC packing instructions (IMDG) | IBC08 |
| IBC special provisions (IMDG) | B2, B4 |
| Tank instructions (IMDG) | T3 |
| Tank special provisions (IMDG) | TP33 |
| EmS-No. (Fire) | F-A |
| EmS-No. (Spillage) | S-G |
| Stowage category (IMDG) | B |
| Stowage and handling (IMDG) | SW1, H2 |
| Properties and observations (IMDG) | Causes burns to skin, eyes and mucous membranes. |

**- Air transport**

| PCA Excepted quantities (IATA) | E2 |
| PCA Limited quantities (IATA) | Y844 |
| PCA limited quantity max net quantity (IATA) | 5kg |
| PCA packing instructions (IATA) | 859 |
| PCA max net quantity (IATA) | 15kg |
| CAO packing instructions (IATA) | 863 |
| CAO max net quantity (IATA) | 50kg |
| ERG code (IATA) | 8S |

**- Inland waterway transport**

| Classification code (ADN) | CF2 |
| Special provisions (ADN) | 274 |
| Limited quantities (ADN) | 1 kg |
| Excepted quantities (ADN) | E2 |
| Equipment required (ADN) | PP, EP |
t-BUTYLDIMETHYLCHLOROGERMANE
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Number of blue cones/lights (ADN) : 1

- Rail transport
  Classification code (RID) : CF2
  Special provisions (RID) : 274
  Limited quantities (RID) : 1kg
  Excepted quantities (RID) : E2
  Packing instructions (RID) : P002, IBC08
  Special packing provisions (RID) : B4
  Mixed packing provisions (RID) : MP10
  Portable tank and bulk container instructions (RID) : T3
  Portable tank and bulk container special provisions (RID) : TP33
  Tank codes for RID tanks (RID) : SGAN, L4BN
  Transport category (RID) : 2
  Special provisions for carriage – Packages (RID) : W11
  Colis express (express parcels) (RID) : CE10
  Hazard identification number (RID) : 84

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

1-BUTYLDIMETHYLCHLOROGERMANE is not on the REACH Candidate List
1-BUTYLDIMETHYLCHLOROGERMANE is not on the REACH Annex XIV List
1-BUTYLDIMETHYLCHLOROGERMANE is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

% Volatiles : > 95 %

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-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst 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 II-1
Store unit : 5 liter
Classification remarks : R10 <H228;H314>; 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

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>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</td>
</tr>
</tbody>
</table>

Other information: Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Category 1</td>
</tr>
<tr>
<td>Flam. Sol. 2</td>
<td>Flammable solids, Category 2</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation, Category 1B</td>
</tr>
<tr>
<td>H228</td>
<td>Flammable solid.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>EUH014</td>
<td>Reacts violently with water.</td>
</tr>
</tbody>
</table>

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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