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

1.1. Product identifier

- **Product form**: Substance
- **Physical state**: Liquid
- **Substance name**: DI-t-BUTOXYDIACETOXYSILANE, tech-96
- **Product code**: SID2790.0
- **Formula**: C12H24O6Si
- **Synonyms**: SILICON DI-t-BUTOXIDE DIACETATE
- **Chemical family**: ESTER

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]**
- **Skin corrosion/irritation, Category 1B**: H314
- **Serious eye damage/eye irritation, Category 1**: H318

**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)**: GHS05
- **Signal word (CLP)**: Danger
- **Hazard statements (CLP)**: H314 - Causes severe skin burns and eye damage.
- **Precautionary statements (CLP)**: P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P260 - Do not breathe vapours.
P264 - Wash hands thoroughly after handling.
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P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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 POISON CENTER or doctor/physician

2.3. Other hazards

Other hazards not contributing to the classification: The hydrolysis products of di-t-butoxydiacetoxysilane are t-butanol and acetic acid.

SECTION 3: Composition/information on ingredients

3.1. Substances

<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>Di-t-butoxydiacetoxysilane</td>
<td>(CAS-No.) 13170-23-5 [EC-No.] 236-112-3</td>
<td>&gt; 90</td>
<td>Skin Corr. 1B, H314 Eye Dam. 1, H318</td>
</tr>
<tr>
<td>t-Butoxy triacetoxysilane</td>
<td>(CAS-No.) Not found</td>
<td>&lt; 10</td>
<td>Skin Corr. 1B, H314 Eye Dam. 1, H318</td>
</tr>
<tr>
<td>Tri-t-butoxyacetoxysilane</td>
<td>(CAS-No.) Not found</td>
<td>&lt; 10</td>
<td>Skin Corr. 1B, H314 Eye Dam. 1, H318</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 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. Immediately call a POISON CENTER/doctor.

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 burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects 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: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

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

**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.

**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**
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.

Hygiene measures: Wash contaminated clothing before reuse. Wash hands thoroughly after handling.

**7.2. Conditions for safe storage, including any incompatibilities**
Storage conditions: Keep container tightly closed.

Incompatible materials: Water : Moisture.

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**

<table>
<thead>
<tr>
<th>DI-t-butoxydiacetoxysilane (13170-23-5)</th>
<th>USA OSHA</th>
<th>OSHA PEL (TWA) (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10 ppm (based on acetic acid)</td>
</tr>
</tbody>
</table>

**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. Contact lenses should not be worn

**Skin and body protection:**
Wear suitable protective clothing

**Respiratory protection:**
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**

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Appearance</th>
<th>Molecular mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
<td>Clear liquid.</td>
<td>292.4 g/mol</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic. Acetic acid.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.404</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>-4 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>102 °C @ 5 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>95 °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>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure at 50 °C</td>
<td>0.03 mm Hg</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.0196</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>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>9.2. Other information</td>
<td>No additional information available</td>
</tr>
<tr>
<td>SECTION 10: Stability and reactivity</td>
<td></td>
</tr>
<tr>
<td>10.1. Reactivity</td>
<td>No additional information available</td>
</tr>
<tr>
<td>10.2. Chemical stability</td>
<td>Stable.</td>
</tr>
<tr>
<td>10.3. Possibility of hazardous reactions</td>
<td>Material decomposes slowly in contact with moist air or with water liberating t-butanol and acetic acid.</td>
</tr>
<tr>
<td>10.5. Incompatible materials</td>
<td>Moisture. Water :</td>
</tr>
<tr>
<td>10.6. Hazardous decomposition products</td>
<td>t-Butanol. Organic acid vapors. Silicon dioxide. At temperatures &gt;150°C small amounts of acetic anhydride, a lachrymator, will form.</td>
</tr>
<tr>
<td>SECTION 11: Toxicological information</td>
<td></td>
</tr>
<tr>
<td>11.1. Information on toxicological effects</td>
<td></td>
</tr>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye damage.</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>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Symptoms/effects after inhalation</td>
<td>May cause irritation to the respiratory tract.</td>
</tr>
</tbody>
</table>
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Symptoms/effects after skin contact: Causes burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: No information available.

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
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging disposal recommendations: Incinerate. 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

14.1. UN number
UN-No. (ADR) : 3265
UN-No. (IMDG) : 3265
UN-No. (IATA) : 3265
UN-No. (ADN) : 3265
UN-No. (RID) : 3265

14.2. UN proper shipping name
Proper Shipping Name (ADR) : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Proper Shipping Name (IMDG) : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Proper Shipping Name (IATA) : Corrosive liquid, acidic, organic, n.o.s.
Proper Shipping Name (ADN) : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Proper Shipping Name (RID) : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Transport document description (ADR) : UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (DI-t-BUTOXYDIACETOXYSILANE), 8, III, (E)
Transport document description (IMDG) : UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (DI-t-BUTOXYDIACETOXYSILANE), 8, III
Transport document description (IATA) : UN 3265 Corrosive liquid, acidic, organic, n.o.s. (DI-t-BUTOXYDIACETOXYSILANE), 8, III
Transport document description (ADN) : UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (DI-t-BUTOXYDIACETOXYSILANE), 8, III
Transport document description (RID) : UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (DI-t-BUTOXYDIACETOXYSILANE), 8, III

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : 8
Danger labels (ADR) : 8
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IMDG
Transport hazard class(es) (IMDG) : 8
Danger labels (IMDG) : 8

IATA
Transport hazard class(es) (IATA) : 8
Danger labels (IATA) : 8

ADN
Transport hazard class(es) (ADN) : 8
Danger labels (ADN) : 8

RID
Transport hazard class(es) (RID) : 8
Danger labels (RID) : 8

14.4. Packing group
Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

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) : C3
  Special provisions (ADR) : 274
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Limited quantities (ADR) : 5l
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P001, IBC03, LP01, R001
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T7
Portable tank and bulk container special provisions (ADR) : TP1, TP28
Tank code (ADR) : L4BN
Vehicle for tank carriage : AT
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V12
Hazard identification number (Kemler No.) : 80
Orange plates : 80
Tunnel restriction code (ADR) : E
EAC code : 2X
APP code : B

- Transport by sea
Special provisions (IMDG) : 223, 274
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : P001, LP01
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T7
Tank special provisions (IMDG) : TP1, TP28
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B
Stowage category (IMDG) : A
Stowage and handling (IMDG) : SW2
Properties and observations (IMDG) : Causes burns to skin, eyes and mucous membranes.

- Air transport
PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y841
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 852
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 856
CAO max net quantity (IATA) : 60L
Special provisions (IATA) : A3
ERG code (IATA) : 8L

- Inland waterway transport
Classification code (ADN) : C3
Special provisions (ADN) : 274
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E1
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

- Rail transport
Classification code (RID) : C3
Special provisions (RID) : 274
Limited quantities (RID) : 5L
Excepted quantities (RID) : E1
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Packing instructions (RID) : P001, IBC03, LP01, R001
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T7
Portable tank and bulk container special provisions (RID) : TP1, TP28
Tank codes for RID tanks (RID) : L4BN
Transport category (RID) : 3
Special provisions for carriage – Packages (RID) : W12
Colis express (express parcels) (RID) : CE8
Hazard identification number (RID) : 80

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
DI-t-BUTOXYDIACETOXYSilane, tech-96 is not on the REACH Candidate List
DI-t-BUTOXYDIACETOXYSilane, tech-96 is not on the REACH Annex XIV List

15.1.2. National regulations

Germany
Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV; ID No. 9237)
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-limiteerbaar lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limiteerbaar lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limiteerbaar lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Class for fire hazard : Class III-1
Store unit : 50 liter
Classification remarks : Flammable according to the Danish Ministry of Justice; 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:

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: permissable 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

Print date: 04/02/2020 EN (English) SDS ID: SID2790.0 8/9
### DI-t-BUTOXYDIACETOXYSILANE, tech-96

#### Safety Data Sheet

Other information: Prepared by safety and environmental affairs.

<table>
<thead>
<tr>
<th>Full text of H- and EUH-statements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye Dam. 1</strong></td>
</tr>
<tr>
<td><strong>Skin Corr. 1B</strong></td>
</tr>
<tr>
<td><strong>H314</strong></td>
</tr>
<tr>
<td><strong>H318</strong></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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