SECTION 1: Identification

1.1. Identification

Product name: DIISOBUTYLDIMETHOXYSILANE
Product code: SID3530.0
Product form: Substance
Physical state: Liquid
Formula: C10H24O2Si
Synonyms: BIS(2-METHYLPROPYL)DIMETHOXYSILANE
Chemical family: ORGANOMETHOXYSILANE

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
Skin corrosion/irritation Category 2 H315 Causes skin irritation
Serious eye damage/eye irritation Category 2A H319 Causes serious eye irritation

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): Warning
Hazard statements (GHS-US):
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS-US):
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Wash hands thoroughly after handling.
P302+P352 - If on skin: Wash with plenty of water
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.

2.3. Hazards not otherwise classified (HNOC)

Other hazards not contributing to the classification:
Note: The hydrolysis product of this product is methanol. Swallowing methanol can cause drowsiness, unconsciousness, blindness and death.

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type: Multi-constituent
Name: DIISOBUTYLDIMETHOXYSILANE
DIISOBUTYLDIMETHOXYSILANE
Safety Data Sheet

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.

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 (acute and delayed)

Symptoms/effects after inhalation: May cause irritation to the respiratory tract. Overexposure may cause: Coughing. 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.

Chronic symptoms: On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

4.3. Immediate medical attention and special treatment, if necessary

NOTE TO PHYSICIAN: This product reacts with water in the acid contents of the stomach to form methanol. The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 mls/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


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

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.
DIISOBUTYLDIMETHOXYSILANE
Safety Data Sheet

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 vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors.

Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

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

Incompatible materials: Moisture, Water.

Storage area: Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
<th>ACGIH TWA (ppm)</th>
<th>200 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>ACGIH STEL (ppm)</td>
<td>250 ppm</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>200 ppm</td>
</tr>
<tr>
<td>IDLH</td>
<td>US IDLH (ppm)</td>
<td>6000 ppm</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (TWA) (ppm)</td>
<td>200 ppm</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (STEL) (mg/m³)</td>
<td>325 mg/m³</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (STEL) (ppm)</td>
<td>250 ppm</td>
</tr>
</tbody>
</table>

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. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
NIOSH-certified organic vapor (black 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>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>204.39 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>Straw.</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild.</td>
</tr>
</tbody>
</table>
DIISOBUTYLDIMETHOXYSILANE
Safety Data Sheet

Odor threshold : No data available
Refractive index : 1.4167
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : No data available
Freezing point : < 0 °C
Boiling point : 120 °C @ 6 mm Hg
Flash point : 102 °C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : < 1 mm Hg @ 25°C
Relative vapor density at 20 °C : > 1
Relative density : 0.87
Solubility : Insoluble in water. Reacts with 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 in sealed containers.

10.3. Possibility of hazardous reactions
React with water and moisture in air, liberating methanol.

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

10.5. Incompatible materials
Moisture. Water.

10.6. Hazardous decomposition products
Methanol. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 inhalation rat (ppm)</td>
<td>22500 ppm (Exposure time: 8 h)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>100 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>300 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>3 mg/l/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
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
DIISOBUTYLDIMETHOXY SILANE
Safety Data Sheet

Specific target organ toxicity – repeated exposure
Not classified

Aspiration hazard
Not classified

Symptoms/effects after inhalation
May cause irritation to the respiratory tract. Overexposure may cause: Coughing. 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.

Chronic symptoms
On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

Reason for classification
Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>LC50 fish 2</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
</tr>
<tr>
<td>Log Pow</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. 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

<table>
<thead>
<tr>
<th>Product/Packaging disposal recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>May be incinerated. Dispose in a safe manner in accordance with local/national regulations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ecology - waste materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid release to the environment.</td>
</tr>
</tbody>
</table>

SECTION 14: Transport information

14.1. UN number
Not regulated for transport.

14.2. UN proper shipping name
Not applicable

14.3. Additional information

<table>
<thead>
<tr>
<th>Other information</th>
</tr>
</thead>
<tbody>
<tr>
<td>No supplementary information available.</td>
</tr>
</tbody>
</table>

Transport by sea
No additional information available

Air transport
No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>Subject to reporting requirements of United States SARA Section 313</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SARA Section 313 - Emission Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disiobutyltrimethoxysilane (17980-32-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>
15.2. International regulations

**CANADA**

**Methanol (67-56-1)**

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class B Division 2 - Flammable Liquid</td>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
<tr>
<td>Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects</td>
<td></td>
</tr>
<tr>
<td>Class D Division 2 Subdivision A - Very toxic material causing other toxic effects</td>
<td></td>
</tr>
</tbody>
</table>

Diisobutyldimethoxysilane (17980-32-4)

<table>
<thead>
<tr>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the Canadian NDSL (Non-Domestic Substances List)</td>
</tr>
</tbody>
</table>

**EU-Regulations**

**Methanol (67-56-1)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**National regulations**

**Methanol (67-56-1)**

<table>
<thead>
<tr>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
</tr>
<tr>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
</tr>
<tr>
<td>Listed on the Japanese ENCS (Existing &amp; New Chemical Substances) inventory</td>
</tr>
<tr>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
</tr>
<tr>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
</tr>
<tr>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Japanese Poisonous and Deleterious Substances Control Law</td>
</tr>
<tr>
<td>Listed on the Canadian IDL (Ingredient Disclosure List)</td>
</tr>
<tr>
<td>Listed on INSQ (Mexican National Inventory of Chemical Substances)</td>
</tr>
<tr>
<td>Listed on CICR (Turkish Inventory and Control of Chemicals)</td>
</tr>
</tbody>
</table>

Diisobutyldimethoxysilane (17980-32-4)

<table>
<thead>
<tr>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
</tr>
<tr>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
</tr>
<tr>
<td>Listed on the Japanese ENCS (Existing &amp; New Chemical Substances) inventory</td>
</tr>
<tr>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
</tr>
<tr>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
</tbody>
</table>

15.3. US State regulations

**Methanol (67-56-1)**

<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 significant risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Methanol (67-56-1)**

<table>
<thead>
<tr>
<th>U.S. - Massachusetts - Right To Know List</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
<tr>
<td>U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List</td>
</tr>
<tr>
<td>U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>

**SECTION 16: Other information**

Full text of H-phrases:

- **H225**: Highly flammable liquid and vapour
- **H301**: Toxic if swallowed
- **H311**: Toxic in contact with skin
- **H315**: Causes skin irritation
- **H318**: Causes serious eye damage
- **H319**: Causes serious eye irritation
- **H331**: Toxic if inhaled
- **H336**: May cause drowsiness or dizziness
- **H370**: Causes damage to organs
DIISOBUTYLDIMETHOXYSILANE
Safety Data Sheet

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: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
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.
Date of issue: 12/04/2014
Version: 1.0

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

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