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

1.1. Product identifier

Product form                  : Substance
Physical state               : Liquid
Substance name               : 2-CYANOETHYLTRIETHOXYSilANE
Product code                 : SIC2445.0
Formula                      : C9H19NO3Si
Synonyms                     : 3-(TRIETHOXYSYL)PROPIONITRILE
Chemical family              : ORGANOETHOXYSiLANE

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]
Serious eye damage/eye irritation, Category 2  H319
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) : GHS07

Signal word (CLP)            : Warning
Hazard statements (CLP)      : H319 - Causes serious eye irritation.
Precautionary statements (CLP) : P264 - Wash hands, forearms and face thoroughly after handling. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mono-constituent</td>
<td>2-CYANOETHYLTRIETHOXYSILANE</td>
<td>919-31-3</td>
<td>213-050-5</td>
</tr>
</tbody>
</table>

<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>2-cyanoethyltriethoxysilane</td>
<td>(CAS-No.) 919-31-3 (EC-No.) 213-050-5</td>
<td>95 - 100</td>
<td>Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
No 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. Consult an ophthalmologist if irritation persists.

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

<table>
<thead>
<tr>
<th>Symptoms/effects after inhalation</th>
<th>Symptoms/effects after skin contact</th>
<th>Symptoms/effects after eye contact</th>
<th>Symptoms/effects after ingestion</th>
</tr>
</thead>
</table>

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: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Irritating fumes and acid vapors may develop when material is exposed to elevated temperatures 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 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.


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6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper protection.

6.2. Environmental precautions
Avoid release to the environment. 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
For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
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: Provide good ventilation in process area to prevent formation of vapour. Avoid all eye and skin contact and do not breathe vapour and mist. Take precautionary measures against static discharge. Containers must be properly grounded before beginning transfer. Use only non-sparking tools.
Hygiene measures: Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container tightly closed.
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:
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: Liquid
Appearance: Clear.
Molecular mass: 217.34 g/mol
Colour: Straw.
Odour: Mild.
Odour threshold: No data available
Refractive index: 1.41
pH: No data available
2-CYANOETHYLTRIETHOXYSILANE
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</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>222 - 224 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>86 °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>Combustible liquid</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 2 mm Hg @ 25°C</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.98</td>
</tr>
<tr>
<td>Density (air=1)</td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble. Reacts.</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 in sealed containers.

10.3. Possibility of hazardous reactions
Reacts with water and moisture in air, liberating ethanol.

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

10.5. Incompatible materials
Moisture. Water.

10.6. Hazardous decomposition products
Organic acid vapors. Ethanol.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

2-CYANOETHYLTRIETHOXYSILANE (919-31-3)

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>5630 mg/kg</td>
</tr>
<tr>
<td>LD50 oral rabbit</td>
<td>5950 mg/kg</td>
</tr>
<tr>
<td>ATE CLP (oral)</td>
<td>5630 mg/kg bodyweight</td>
</tr>
</tbody>
</table>

2-cyanoethyltriethoxysilane (919-31-3)

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>5630 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>5950 mg/kg</td>
</tr>
<tr>
<td>ATE CLP (oral)</td>
<td>5630 mg/kg bodyweight</td>
</tr>
<tr>
<td>ATE CLP (dermal)</td>
<td>5950 mg/kg bodyweight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified
Serial eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
**2-CYANOETHYLTRIETHOXYSILANE**

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<table>
<thead>
<tr>
<th><strong>STOT-repeated exposure</strong></th>
<th>Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aspiration hazard</strong></td>
<td>Not classified</td>
</tr>
<tr>
<td><strong>Symptoms/effects after inhalation</strong></td>
<td>May cause irritation to the respiratory tract. Overexposure may cause: Cough. Headache. Nausea.</td>
</tr>
<tr>
<td><strong>Symptoms/effects after skin contact</strong></td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td><strong>Symptoms/effects after eye contact</strong></td>
<td>Causes eye irritation.</td>
</tr>
<tr>
<td><strong>Symptoms/effects after ingestion</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Reason for classification</strong></td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

**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**
- Product/Packaging disposal recommendations: May be incinerated. Dispose of contents/container to licensed waste disposal facility. Dispose in a safe manner in accordance with local/national regulations.
- 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): Not applicable
- UN-No. (IMDG): Not applicable
- UN-No. (IATA): Not applicable
- UN-No. (ADN): Not applicable
- UN-No. (RID): Not applicable

**14.2. UN proper shipping name**
- Proper Shipping Name (ADR): Not applicable
- Proper Shipping Name (IMDG): Not applicable
- Proper Shipping Name (IATA): Not applicable
- Proper Shipping Name (ADN): Not applicable
- Proper Shipping Name (RID): Not applicable

**14.3. Transport hazard class(es)**

| ADR | Not applicable |
| IMDG | Not applicable |
| IATA | Not applicable |
ADN
Transport hazard class(es) (ADN) : Not applicable

RID
Transport hazard class(es) (RID) : Not applicable

14.4. Packing group
Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container > 119 gallons (450 liters). The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations.

14.6. Special precautions for user
- Overland transport
No data available
- Transport by sea
No data available
- Air transport
No data available
- Inland waterway transport
No data available
- Rail transport
No data available

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
2-CYANOETHYLTRIETHOXYSILANE is not on the REACH Candidate List
2-CYANOETHYLTRIETHOXYSILANE is not on the REACH Annex XIV List
2-CYANOETHYLTRIETHOXYSILANE 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.

15.1.2. National regulations

Germany

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
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NIET-limitatieve lijst van voor de voortplanting
gifte stoffen – Ontwikkeling

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

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviations</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>H319</th>
<th>Causes serious eye irritation.</th>
</tr>
</thead>
</table>

Eye Irrit. 2  Serious eye damage/eye irritation, Category 2

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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