

**TETRAETHOXYSilANE, 98%****Safety Data Sheet SIT7110.0**

Issue date: 09/01/2015

Revision date: 05/10/2020

Version: 2.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

| | |
|-----------------|---|
| Product form | : Substance |
| Physical state | : Liquid |
| Substance name | : TETRAETHOXYSilANE, 98% |
| Product code | : SIT7110.0 |
| Formula | : C ₈ H ₂₀ O ₄ Si |
| Synonyms | : TETRAETHYLORTHOSILICATE; TEOS; SILICON TETRAETHOXIDE; TETRAETHYL SILICATE; ETHYL SILICATE |
| 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**

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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 liquids, Category 3 | H226 |
| Acute toxicity (inhalation:vapour) Category 4 | H332 |
| Serious eye damage/eye irritation, Category 2 | H319 |
| Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation | H335 |

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

GHS07

Signal word (CLP)

: Warning

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| | |
|--------------------------------|--|
| Hazard statements (CLP) | : H226 - Flammable liquid and vapour. H319 - Causes serious eye irritation. H332 - Harmful if inhaled. H335 - May cause respiratory irritation. |
| 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. P264 - Wash hands thoroughly after handling. P261 - Avoid breathing vapours. P312 - Call a doctor if you feel unwell. |

2.3. Other hazards

| | |
|--|--|
| Other hazards not contributing to the classification | : Additional ethanol may be formed by reaction with moisture and water. The hydrolysis product of this compound is ethanol. Overexposure to ethanol by skin absorption, inhalation or ingestion may have a narcotic effect (headache, nausea, drowsiness). Ethanol is metabolized to acetaldehyde and acetic acid which in large quantities result in metabolic acidosis, CNS depression and death due to respiratory arrest. The US OSHA PEL (TWA) for ethanol is 1000 ppm. This product contains ethanol which is classified as a carcinogen by IARC in alcoholic beverages. |
|--|--|

SECTION 3: Composition/information on ingredients

3.1. Substances

| | |
|----------------|--------------------------|
| Substance type | : Mono-constituent |
| Name | : TETRAETHOXYSilANE, 98% |
| CAS-No. | : 78-10-4 |
| EC-No. | : 201-083-8 |
| EC Index-No. | : 014-005-00-0 |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------|--|----------|--|
| Ethyl silicate | (CAS-No.) 78-10-4 (EC-No.) 201-083-8 (EC Index-No.) 014-005-00-0 | 95 – 100 | Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2, H319 STOT SE 3, H335 |

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. IF exposed or concerned: Get medical advice/attention. |
| 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 inhalation | : May cause respiratory irritation. May be harmful if inhaled. |
| Symptoms/effects after skin contact | : May cause 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. Indication of any immediate medical attention and special treatment needed

No additional information available

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SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Water fog. Foam. Carbon dioxide. Dry chemical.
- Unsuitable extinguishing media : Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Flammable liquid and vapour. 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.
- 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 : Remove 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 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. 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. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Use only non-sparking tools.
- 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

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
- Storage conditions : Keep container tightly closed. Keep in a cool place. Store locked up.
- Incompatible materials : Oxidizing agent. 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

| Ethyl silicate (78-10-4) | | |
|--------------------------|------------------------------|-----------|
| Austria | MAK [mg/m³] | 170 mg/m³ |
| Austria | MAK [ppm] | 20 ppm |
| Austria | MAK Short time value [mg/m³] | 340 mg/m³ |
| Austria | MAK Short time value [ppm] | 40 ppm |
| Belgium | Limit value [mg/m³] | 86 mg/m³ |
| Belgium | Limit value [ppm] | 10 ppm |

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| Ethyl silicate (78-10-4) | | |
|------------------------------|--|-----------------------|
| Bulgaria | OEL TWA (mg/m ³) | 100 mg/m ³ |
| France | VME [mg/m ³] | 85 mg/m ³ |
| France | VME [ppm] | 10 ppm |
| Germany | Occupational exposure limit value (mg/m ³) | 12 mg/m ³ |
| Germany | Occupational exposure limit value (ppm) | 1.4 ppm |
| Greece | OEL TWA (mg/m ³) | 170 mg/m ³ |
| Greece | OEL TWA (ppm) | 20 ppm |
| Greece | OEL STEL (mg/m ³) | 255 mg/m ³ |
| Greece | OEL STEL (ppm) | 30 ppm |
| Italy - Portugal - USA ACGIH | ACGIH TWA (ppm) | 10 ppm |
| USA IDLH | US IDLH (ppm) | 700 ppm |
| USA NIOSH | NIOSH REL (TWA) (mg/m ³) | 85 mg/m ³ |
| USA NIOSH | NIOSH REL (TWA) [ppm] | 10 ppm |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 850 mg/m ³ |
| USA OSHA | OSHA PEL (TWA) (ppm) | 100 ppm |
| Spain | VLA-ED (mg/m ³) | 87 mg/m ³ |
| Spain | VLA-ED (ppm) | 10 ppm |
| Switzerland | KZGW (mg/m ³) | 85 mg/m ³ |
| Switzerland | KZGW (ppm) | 10 ppm |
| Switzerland | MAK (mg/m ³) | 85 mg/m ³ |
| Switzerland | MAK (ppm) | 10 ppm |
| Czech Republic | Expoziční limity (PEL) (mg/m ³) | 50 mg/m ³ |
| Denmark | Grænseværdi (8 timer) (mg/m ³) | 85 mg/m ³ |
| Denmark | Grænseværdi (8 timer) (ppm) | 10 ppm |
| Finland | HTP-arvo (8h) (mg/m ³) | 86 mg/m ³ |
| Finland | HTP-arvo (8h) (ppm) | 10 ppm |
| Finland | HTP-arvo (15 min) | 170 mg/m ³ |
| Finland | HTP-arvo (15 min) (ppm) | 20 ppm |
| Ireland | OEL (8 hours ref) (mg/m ³) | 85 mg/m ³ |
| Ireland | OEL (8 hours ref) (ppm) | 10 ppm |
| Ireland | OEL (15 min ref) (mg/m ³) | 255 mg/m ³ |
| Ireland | OEL (15 min ref) (ppm) | 30 ppm |
| Norway | Grenseverdier (AN) (mg/m ³) | 85 mg/m ³ |
| Norway | Grenseverdier (AN) (ppm) | 10 ppm |
| Norway | Grenseverdier (Korttidsverdi) (mg/m ³) | 85 mg/m ³ |
| Norway | Grenseverdier (Korttidsverdi) (ppm) | 10 ppm |
| Poland | NDS (mg/m ³) | 80 mg/m ³ |
| Romania | OEL TWA (mg/m ³) | 100 mg/m ³ |
| Romania | OEL STEL (mg/m ³) | 200 mg/m ³ |
| Canada (Quebec) | VEMP (mg/m ³) | 85 mg/m ³ |
| Canada (Quebec) | VEMP (ppm) | 10 ppm |
| Australia | TWA (mg/m ³) | 85 mg/m ³ |
| Australia | TWA (ppm) | 10 ppm |
| Portugal | OEL TWA (ppm) | 10 ppm |

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:

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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 organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | : Liquid |
| Appearance | : Clear liquid. |
| Molecular mass | : 208.33 g/mol |
| Colour | : No data available |
| Odour | : characteristic. |
| Odour threshold | : No data available |
| Refractive index | : 1.3818 |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : < -85 °C |
| Freezing point | : No data available |
| Boiling point | : 169 °C |
| Flash point | : 46 °C |
| Auto-ignition temperature | : 260 °C |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Flammable liquid and vapour. |
| Vapour pressure | : 200 mm Hg @ 108°C |
| Relative vapour density at 20 °C | : 7.2 |
| Relative density | : 0.9335 |
| % Volatiles | : 100 % |
| Solubility | : Reacts with water. Solubility parameter: 7.87. |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Partition coefficient n-octanol/water (Log Kow) | : No data available |
| Viscosity, kinematic | : 0.8 cSt |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : 1.33 – 9.75 vol % (lower; upper) |

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.

10.3. Possibility of hazardous reactions

Material decomposes slowly in contact with moist air or with water liberating ethanol.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Oxidizing agent. Moisture. Water :

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10.6. Hazardous decomposition products

Ethanol. Organic acid vapors. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if inhaled.

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| | |
|-------------------|-----------------------|
| LD50 oral rat | 9280 mg/kg |
| ATE CLP (oral) | 9280 mg/kg bodyweight |
| ATE CLP (vapours) | 11 mg/l/4h |

Ethyl silicate (78-10-4)

| | |
|---------------------|-------------|
| LD50 oral rat | 6270 mg/kg |
| LDLo inhalation rat | 1000 ppm/4h |

| | |
|-------------------------------------|---|
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Causes serious eye irritation. Eye Irritation: eye-hmn, 3000 ppm: severe Irritant |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| 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. May be harmful if inhaled. |
| Symptoms/effects after skin contact | : May cause 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

| | |
|---|------------------|
| 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

| | |
|--|---|
| Sewage disposal recommendations | : Do not dispose of waste into sewer. |
| 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.. |
| Additional information | : Handle empty containers with care because residual vapours are flammable. |
| Ecology - waste materials | : Avoid release to the environment. |

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SECTION 14: Transport information

14.1. UN number

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

14.1. UN number

| | |
|---------------|--------|
| UN-No. (ADR) | : 1292 |
| UN-No. (IMDG) | : 1292 |
| UN-No. (IATA) | : 1292 |
| UN-No. (ADN) | : 1292 |
| UN-No. (RID) | : 1292 |

14.2. UN proper shipping name

| | |
|---------------------------------------|---|
| Proper Shipping Name (ADR) | : TETRAETHYL SILICATE |
| Proper Shipping Name (IMDG) | : TETRAETHYL SILICATE |
| Proper Shipping Name (IATA) | : Tetraethyl silicate |
| Proper Shipping Name (ADN) | : TETRAETHYL SILICATE |
| Proper Shipping Name (RID) | : TETRAETHYL SILICATE |
| Transport document description (ADR) | : UN 1292 TETRAETHYL SILICATE, 3, III, (D/E) |
| Transport document description (IMDG) | : UN 1292 TETRAETHYL SILICATE, 3, III (37°C c.c.) |
| Transport document description (IATA) | : UN 1292 Tetraethyl silicate, 3, III |
| Transport document description (ADN) | : UN 1292 TETRAETHYL SILICATE, 3, III |
| Transport document description (RID) | : UN 1292 TETRAETHYL SILICATE, 3, III |

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 |

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RID

Transport hazard class(es) (RID) : 3

Danger labels (RID) : 3



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) : F1

Limited quantities (ADR) : 5I

Excepted quantities (ADR) : E1

Packing instructions (ADR) : P001, IBC03, LP01, R001

Mixed packing provisions (ADR) : MP19

Portable tank and bulk container instructions (ADR) : T2

Portable tank and bulk container special provisions (ADR) : TP1

Tank code (ADR) : LGBF

Vehicle for tank carriage : FL

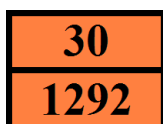
Transport category (ADR) : 3

Special provisions for carriage - Packages (ADR) : V12

Special provisions for carriage - Operation (ADR) : S2

Hazard identification number (Kemler No.) : 30

Orange plates :



Tunnel restriction code (ADR) : D/E

EAC code : 3Y

- Transport by sea

Limited quantities (IMDG) : 5 L

Excepted quantities (IMDG) : E1

Packing instructions (IMDG) : P001, LP01

IBC packing instructions (IMDG) : IBC03

Tank instructions (IMDG) : T2

Tank special provisions (IMDG) : TP1

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| | |
|------------------------------------|---|
| EmS-No. (Fire) | : F-E |
| EmS-No. (Spillage) | : S-D |
| Stowage category (IMDG) | : A |
| Flash point (IMDG) | : 37°C c.c. |
| Properties and observations (IMDG) | : Colourless liquid. Flashpoint: 37°C c.c. Explosive limits: 1.3% to 23% Immiscible with water. |

- Air transport

| | |
|--|--------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y344 |
| PCA limited quantity max net quantity (IATA) | : 10L |
| PCA packing instructions (IATA) | : 355 |
| PCA max net quantity (IATA) | : 60L |
| CAO packing instructions (IATA) | : 366 |
| CAO max net quantity (IATA) | : 220L |
| ERG code (IATA) | : 3L |

- Inland waterway transport

| | |
|-----------------------------------|-------------|
| Classification code (ADN) | : F1 |
| Limited quantities (ADN) | : 5 L |
| Excepted quantities (ADN) | : E1 |
| Equipment required (ADN) | : PP, EX, A |
| Ventilation (ADN) | : VE01 |
| Number of blue cones/lights (ADN) | : 0 |

- Rail transport

| | |
|---|---------------------------|
| Classification code (RID) | : F1 |
| Limited quantities (RID) | : 5L |
| Excepted quantities (RID) | : E1 |
| Packing instructions (RID) | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID) | : MP19 |
| Portable tank and bulk container instructions (RID) | : T2 |
| Portable tank and bulk container special provisions (RID) | : TP1 |
| Tank codes for RID tanks (RID) | : LGBF |
| Transport category (RID) | : 3 |
| Special provisions for carriage – Packages (RID) | : W12 |
| Colis express (express parcels) (RID) | : CE4 |
| Hazard identification number (RID) | : 30 |

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

TETRAETHOXYSilANE, 98% is not on the REACH Candidate List

TETRAETHOXYSilANE, 98% is not on the REACH Annex XIV List

TETRAETHOXYSilANE, 98% 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.

TETRAETHOXYSilANE, 98% is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

% Volatiles : 100 %

15.1.2. National regulations

Germany

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| | |
|--|--|
| Regulatory reference | : WGK 1, Slightly hazardous to water (Classification according to VwVwS, Annex 1 or 2; ID No. 450) |
| Hazardous Incident Ordinance (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 <H226;H319;H332;H335>; 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: 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 |
|--|--|

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

| | |
|----------------------------------|--|
| Acute Tox. 4 (Inhalation) | Acute toxicity (inhal.), Category 4 |
| Acute Tox. 4 (Inhalation:vapour) | Acute toxicity (inhalation:vapour) Category 4 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 3 | Flammable liquids, Category 3 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H226 | Flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| 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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