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

1.1. Product identifier

- **Product form**: Substance
- **Physical state**: Liquid
- **Substance name**: TITANIUM ISOPROPOXIDE
- **Product code**: AKT872
- **Formula**: C12H28O4Ti
- **Synonyms**: ISOPROPYL TITANATE; TITANIUM TETRA(2-PROPOXIDE); TETRAISOPROPYL TITANATE
- **Chemical family**: METAL 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]**

- Flammable liquids, Category 3: H226
- Acute toxicity (inhalation:vapour) Category 3: H331
- 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)**: 
  - GHS02
  - GHS06

- **Signal word (CLP)**: Danger

- **Hazard statements (CLP)**: H226 - Flammable liquid and vapour.
  - H319 - Causes serious eye irritation.
  - H331 - Toxic if inhaled.
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.  
P304+P351+P338 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P340 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P311 - Call a doctor.

2.3. Other hazards  
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances  
Substance type: Multi-constituent  
Name: TITANIUM ISOPROPOXIDE  
CAS-No.: 546-68-9  
EC-No.: 208-909-6

Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
--- | --- | --- | --- |
Titanium isopropoxide | (CAS-No.) 546-68-9 (EC-No.) 208-909-6 | > 96 | Flam. Liq. 3, H226 Acute Tox. 3 (Inhalation: vapour), H331 Eye Irrit. 2, H319 |
Isopropanol | (CAS-No.) 67-63-0 (EC-No.) 200-661-7 (EC Index No.) 603-117-00-0 | < 4 | Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 |

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. Immediately call a POISON CENTER/doctor.  
First-aid measures after skin contact: Wash with plenty of 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, both acute and delayed  
Symptoms/effects after inhalation: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause irritation to the respiratory tract. Headache. Nausea.  
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.

4.3. Indication of any immediate medical attention and special treatment needed  
Note to physician: Activated charcoal slurry may be administered. Activated charcoal slurry is prepared by suspending 50 grams of activated charcoal in 400 ml water and mixing thoroughly. Administer 5 ml/kg.

SECTION 5: Firefighting measures

5.1. Extinguishing media  

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

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. 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. Take precautionary measures against static discharge. Containers and transfer lines require grounding during use. 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: Ground/bond container and receiving equipment. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions: Keep container tightly closed.

Incompatible materials: Moist air. Oxidizing agent. 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

<table>
<thead>
<tr>
<th>Isopropanol (67-63-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>MAK [mg/m³]</td>
</tr>
<tr>
<td>Austria</td>
<td>MAK [ppm]</td>
</tr>
<tr>
<td>Austria</td>
<td>MAK Short time value [mg/m³]</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>MAK Short time value [ppm]</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>Limit value [mg/m³]</td>
</tr>
<tr>
<td>Belgium</td>
<td>Limit value [ppm]</td>
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<tr>
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<td>Short time value [mg/m³]</td>
</tr>
<tr>
<td>Belgium</td>
<td>Short time value [ppm]</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>OEL TWA (mg/m³)</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>OEL STEL (mg/m³)</td>
</tr>
<tr>
<td>France</td>
<td>VLE [mg/m³]</td>
</tr>
<tr>
<td>France</td>
<td>VLE [ppm]</td>
</tr>
<tr>
<td>Germany</td>
<td>Occupational exposure limit value (mg/m³)</td>
</tr>
<tr>
<td>Country</td>
<td>Limit Name (mg/m³)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Germany</td>
<td>Occupational</td>
</tr>
<tr>
<td>Germany</td>
<td>TRGS 903 Biological</td>
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<tr>
<td>Greece</td>
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<td>OEL STEL (ppm)</td>
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<td>ACGIH STEL (ppm)</td>
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<td>Latvia</td>
<td>OEL TWA (mg/m³)</td>
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<tr>
<td>USA IDLH</td>
<td>US IDLH (ppm)</td>
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<td>USA NIOSH</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
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<td>NIOSH REL (TWA) (ppm)</td>
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<td>VLA-EC (ppm)</td>
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<td>KZGW (ppm)</td>
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<td>MAK (mg/m³)</td>
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<td>MAK (ppm)</td>
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<td>WEL TWA (ppm)</td>
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<td>WEL STEL (mg/m³)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL STEL (ppm)</td>
</tr>
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<td>Czech Republic</td>
<td>Expoziční limity (PEL) (mg/m³)</td>
</tr>
<tr>
<td>Denmark</td>
<td>Grænseværdi (8 timer) (mg/m³)</td>
</tr>
<tr>
<td>Denmark</td>
<td>Grænseværdi (8 timer) (ppm)</td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (8h) (mg/m³)</td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (8h) (ppm)</td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (15 min) (mg/m³)</td>
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<td>Finland</td>
<td>HTP-arvo (15 min) (ppm)</td>
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<td>AK-érték</td>
</tr>
<tr>
<td>Hungary</td>
<td>CK-érték</td>
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<td>Ireland</td>
<td>OEL (8 hours ref) (ppm)</td>
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<tr>
<td>Ireland</td>
<td>OEL (15 min ref) (ppm)</td>
</tr>
<tr>
<td>Lithuania</td>
<td>IPRV (mg/m³)</td>
</tr>
<tr>
<td>Lithuania</td>
<td>IPRV (ppm)</td>
</tr>
<tr>
<td>Lithuania</td>
<td>TPRV (mg/m³)</td>
</tr>
<tr>
<td>Lithuania</td>
<td>TPRV (ppm)</td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdier (AN) (mg/m³)</td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdier (AN) (ppm)</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. 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

Physical state : Liquid
Appearance : Clear liquid. Freezes in winter.
Molecular mass : 284.25 g/mol
Colour : Pale yellow.
Odour : No data available
Odour threshold : No data available
Refractive index : 1.4654
pH : No data available
**TITANIUM ISOPROPXIDE**
Safety Data Sheet

**Relative evaporation rate (butylacetate=1)**: No data available
**Melting point**: No data available
**Freezing point**: 15 – 19 °C
**Boiling point**: 58 °C @ 1 mm Hg
**Flash point**: 25 °C
**Auto-ignition temperature**: 580 °C
**Decomposition temperature**: No data available
**Flammability (solid, gas)**: Flammable liquid and vapour.
**Vapour pressure**: 19 mm Hg @ 100 °C
**Vapour pressure at 50 °C**: 0.9 mm Hg
**Relative vapour density at 20 °C**: > 1
**Relative density**: 0.937
**Solubility**: Reacts with water.
**Partition coefficient n-octanol/water (Log Pow)**: No data available
**Partition coefficient n-octanol/water (Log Kow)**: No data available
**Viscosity, kinematic**: 2 cSt
**Viscosity, dynamic**: No data available
**Explosive properties**: No data available
**Oxidising properties**: 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.

**10.3. Possibility of hazardous reactions**
Material decomposes slowly in contact with moist air and rapidly in contact with water liberating isopropanol.

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

**10.5. Incompatible materials**
Oxidizing agent.

**10.6. Hazardous decomposition products**

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**
Acute toxicity: Toxic if inhaled.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Titanium isopropoxide</strong></td>
<td></td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>7460 µl/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 16 ml/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat</td>
<td>7.78 mg/l/4h</td>
</tr>
<tr>
<td>ATE CLP (oral)</td>
<td>7460 mg/kg bodyweight</td>
</tr>
<tr>
<td>ATE CLP (vapours)</td>
<td>7.78 mg/l/4h</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Isopropanol</strong></td>
<td></td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>1870 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>4059 mg/kg</td>
</tr>
<tr>
<td>LC50 Inhalation - Rat</td>
<td>72600 mg/m³ (Exposure time: 4 h)</td>
</tr>
<tr>
<td>ATE CLP (oral)</td>
<td>4396 mg/kg bodyweight</td>
</tr>
<tr>
<td>ATE CLP (dermal)</td>
<td>12800 mg/kg bodyweight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
TITANIUM ISOPROPOXIDE
Safety Data Sheet

Carcinogenicity : Not classified

<table>
<thead>
<tr>
<th>Isopropanol (67-63-0)</th>
<th>3 - Not classifiable</th>
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</thead>
<tbody>
<tr>
<td>IARC group</td>
<td></td>
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<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>Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause irritation to the respiratory tract. Headache. Nausea.</td>
</tr>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Causes serious eye irritation.</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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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Isopropanol (67-63-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>LC50 fish 2</td>
</tr>
<tr>
<td>9640 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
</tr>
<tr>
<td>13299 mg/l (Exposure time: 48 h - Species: Daphnia magna)</td>
</tr>
<tr>
<td>11130 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
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</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Isopropanol (67-63-0)</th>
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</thead>
<tbody>
<tr>
<td>Partition coefficient n-octanol/water (Log Pow)</td>
</tr>
<tr>
<td>0.05 (at 25 °C)</td>
</tr>
</tbody>
</table>

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) : 2413
UN-No. (IMDG) : 2413
UN-No. (IATA) : 2413
UN-No. (ADN) : 2413
UN-No. (RID) : 2413

14.2. UN proper shipping name

Proper Shipping Name (ADR) : TETRAPROPYL ORTHOTITANATE
Proper Shipping Name (IMDG) : TETRAPROPYL ORTHOTITANATE
Proper Shipping Name (IATA) : Tetrapropyl orthotitanate
# TITANIUM ISOPROPOXIDE
## Safety Data Sheet

<table>
<thead>
<tr>
<th>Proper Shipping Name (ADN)</th>
<th>TETRAPROPYL ORTHOTITANATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name (RID)</td>
<td>TETRAPROPYL ORTHOTITANATE</td>
</tr>
<tr>
<td>Transport document description (ADR)</td>
<td>UN 2413 TETRAPROPYL ORTHOTITANATE, 3, III, (D/E)</td>
</tr>
<tr>
<td>Transport document description (IMDG)</td>
<td>UN 2413 TETRAPROPYL ORTHOTITANATE, 3, III (38°C c.c.)</td>
</tr>
<tr>
<td>Transport document description (IATA)</td>
<td>UN 2413 Tetrapropyl orthotitanate, 3, III</td>
</tr>
<tr>
<td>Transport document description (ADN)</td>
<td>UN 2413 TETRAPROPYL ORTHOTITANATE, 3, III</td>
</tr>
<tr>
<td>Transport document description (RID)</td>
<td>UN 2413 TETRAPROPYL ORTHOTITANATE, 3, III</td>
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</tbody>
</table>

### 14.3. Transport hazard class(es)

**ADR**
- Transport hazard class(es) (ADR): 3
- Danger labels (ADR): 3

[Graphic: Explosion]

**IMDG**
- Transport hazard class(es) (IMDG): 3
- Danger labels (IMDG): 3

[Graphic: Explosion]

**IATA**
- Transport hazard class(es) (IATA): 3
- Danger labels (IATA): 3

[Graphic: Explosion]

**ADN**
- Transport hazard class(es) (ADN): 3
- Danger labels (ADN): 3

[Graphic: Explosion]

**RID**
- Transport hazard class(es) (RID): 3
- Danger labels (RID): 3

[Graphic: Explosion]

### 14.4. Packing group

- Packing group (ADR): III
- Packing group (IMDG): III
# TITANIUM ISOPROPOXIDE
## Safety Data Sheet

### Packing group (IATA)
<table>
<thead>
<tr>
<th>Packing group (IATA)</th>
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<tbody>
<tr>
<td>Packing group (ADN)</td>
<td>III</td>
</tr>
<tr>
<td>Packing group (RID)</td>
<td>III</td>
</tr>
</tbody>
</table>

### 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): 5l
- Excepted quantities (ADR): E1
- Packing instructions (ADR): P001, IBC03, LP01, R001
- Mixed packing provisions (ADR): MP19
- Portable tank and bulk container instructions (ADR): T4
- 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: 30
- Tunnel restriction code (ADR): D/E

**- 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): T4
- Tank special provisions (IMDG): TP1
- EmS-No. (Fire): F-E
- EmS-No. (Spillage): S-D
- Stowage category (IMDG): A
- Flash point (IMDG): 38°C c.c.
- Properties and observations (IMDG): Colourless liquid. Flashpoint: 38°C c.c.

**- 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
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

TITANIUM ISOPROPOXIDE is not on the REACH Candidate List

TITANIUM ISOPROPOXIDE is not on the REACH Annex XIV List


15.1.2. National regulations

Germany
Regulatory reference: WGK 1, Slightly hazardous to water (Classification according to VwVwS, Annex 3; ID No. 2301)

Hazardous Incident Ordinance (12. BImSchV): Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-list van kankerverwekkende stoffen: The substance is not listed

SZW-list 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;H331>; 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>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</th>
</tr>
</thead>
</table>

### Other information

Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Inhalation:vapour)</th>
<th>Acute toxicity (inhalation:vapour) Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
<td>Flammable liquids, Category 2</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
<td>Flammable liquids, Category 3</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3, Narcosis</td>
</tr>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapour.</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H331</td>
<td>Toxic if inhaled.</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness.</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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