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

1.1. Product identifier

Product form: Mixture
Physical state: Liquid
Product name: SILICON DIOXIDE, amorphous GEL, 40% in water
Product code: SIS6963.4
Formula: SiO2
Synonyms: COLLOIDAL SILICA
Chemical family: SILICATE SOLUTION

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 3535106-591 - (M-F): 8:00 AM - 4:00 PM
info@gelestd.com - www.gelestd.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 2 H315
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):

Signal word (CLP): Warning
Hazard statements (CLP): H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
Precautionary statements (CLP): P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Wash hands thoroughly after handling.
SILICON DIOXIDE, amorphous GEL, 40% in water
Safety Data Sheet

P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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
Not applicable

3.2. Mixtures

<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>Water</td>
<td>(CAS-No.) 7732-18-5 (EC-No.) 231-791-2</td>
<td>75 - 85</td>
<td>Not classified</td>
</tr>
<tr>
<td>Silicon dioxide, amorphous gel</td>
<td>(CAS-No.) 7631-86-9 (EC-No.) 231-545-4</td>
<td>35 - 45</td>
<td>Not classified</td>
</tr>
<tr>
<td>Ammonium hydroxide</td>
<td>(CAS-No.) 1336-21-6</td>
<td>1 - 2</td>
<td>Skin Corr. 1B, H314 STOT SE 3, H335 Aquatic Acute 1, H400</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

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 irritation to the respiratory tract.

Symptoms/effects after skin contact: Causes (severe) skin burns. Causes alkali burns.

Symptoms/effects after eye contact: Causes serious eye damage.

Symptoms/effects after ingestion: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Not combustible.

Unsuitable extinguishing media: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard: None known.

Explosion hazard: None known.

5.3. Advice for firefighters

Protection during firefighting: Do not attempt to take action without suitable protective equipment. 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
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.

6.4. Reference to other sections
No additional information available

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. Use only in well ventilated areas.
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.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Country</th>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>MAK (mg/m³)</td>
<td>4 mg/m³</td>
</tr>
<tr>
<td>Germany</td>
<td>TRGS 900 Occupational exposure limit (mg/m³)</td>
<td>4 mg/m³</td>
</tr>
<tr>
<td>Italy - Portugal - USA ACGIH</td>
<td>ACGIH TWA (mg/m³)</td>
<td>0.1 mg/m³</td>
</tr>
<tr>
<td>Latvia</td>
<td>OEL TWA (mg/m³)</td>
<td>1 mg/m³</td>
</tr>
<tr>
<td>USA IDLH</td>
<td>US IDLH (mg/m³)</td>
<td>3000 mg/m³</td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>6 mg/m³</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Switzerland</td>
<td>MAK (mg/m³)</td>
<td>4 mg/m³</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL TWA (mg/m³)</td>
<td>6 mg/m³ (inhalable dust)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL STEL (mg/m³)</td>
<td>18 mg/m³ (calculated-inhalable dust)</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Expoziční ilmity (PEL) (mg/m³)</td>
<td>0.1 mg/m³ (respirable fraction)</td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (8h) (mg/m³)</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (8 hours ref) (mg/m³)</td>
<td>6 mg/m³ (total inhalable dust)</td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (15 min ref) (mg/m³)</td>
<td>18 mg/m³ (calculated-total inhalable dust)</td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdier (AN) (mg/m³)</td>
<td>1.5 mg/m³ (respirable dust)</td>
</tr>
</tbody>
</table>
Silicon dioxide, amorphous gel (7631-86-9)

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>Grenseverdier (Kortlidsverd) (mg/m³)</td>
<td>1.5 mg/m³ (respirable dust)</td>
</tr>
<tr>
<td>Slovakia</td>
<td>NPHV (priemerná) (mg/m³)</td>
<td>4 mg/m³ (total aerosol)</td>
</tr>
<tr>
<td>Australia</td>
<td>TWA (mg/m³)</td>
<td>2 mg/m³ (respirable dust)</td>
</tr>
</tbody>
</table>

**Ammonium hydroxide (1336-21-6)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy - Portugal - USA ACGIH</td>
<td>ACGIH TWA (mg/m³)</td>
<td>17 mg/m³</td>
</tr>
<tr>
<td>Italy - Portugal - USA ACGIH</td>
<td>ACGIH STEL (ppm)</td>
<td>25 ppm</td>
</tr>
<tr>
<td>Italy - Portugal - USA ACGIH</td>
<td>ACGIH STEL (mg/m³)</td>
<td>24 mg/m³</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>35 mg/m³</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

**8.2. Exposure controls**

**Appropriate engineering controls:**
Provide local exhaust or general room ventilation.

**Personal protective equipment:**
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:**
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (orange cartridge) respirator.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

- **Physical state**: Liquid
- **Appearance**: Clear solution.
- **Molecular mass**: 60.09 g/mol
- **Colour**: No data available
- **Odour**: No data available
- **Odour threshold**: No data available
- **Refractive index**: No additional information available
- **pH**: No data available
- **pH solution**: 9.1
- **Relative evaporation rate (butylacetate=1)**: No data available
- **Melting point**: No data available
- **Freezing point**: < 0 °C
- **Boiling point**: 100 °C - initial (water)
- **Flash point**: No data available
- **Auto-ignition temperature**: No data available
- **Decomposition temperature**: No data available
- **Flammability (solid, gas)**: No data available
- **Vapour pressure**: < 1 mm Hg 20°C
- **Relative vapour density at 20 °C**: No data available
- **Relative density**: 1.29
- **Solubility**: Soluble in water.
- **Log Pow**: No data available
- **Log Kow**: No data available
- **Viscosity, kinematic**: No data available
SILICON DIOXIDE, amorphous GEL, 40% in water
Safety Data Sheet

<table>
<thead>
<tr>
<th>Viscosity, dynamic</th>
<th>No data available</th>
</tr>
</thead>
<tbody>
<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.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
None known.

10.5. Incompatible materials
Acids. Aluminum metal.

10.6. Hazardous decomposition products
Ammonium hydroxide. Carbon dioxide. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity
Not classified.

Water (7732-18-5)
LD50 oral rat  > 90 ml/kg

Silicon dioxide, amorphous gel (7631-86-9)
LD50 oral rat  > 5000 mg/kg
LD50 dermal rabbit  > 2000 mg/kg
LC50 inhalation rat (mg/l)  > 2.2 mg/l (Exposure time: 1 h)

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/irritation
Causes serious eye irritation.

Respiratory or skin sensitisation
Not classified

Germ cell mutagenicity
Not classified

Carcinogenicity
Not classified

Silicon dioxide, amorphous gel (7631-86-9)
IARC group 3 - Not classifiable

Reproductive toxicity
Not classified

STOT-single exposure
Not classified

STOT-repeated exposure
Not classified

Aspiration hazard
Not classified

Symptoms/effects after inhalation
May cause irritation to the respiratory tract.

Symptoms/effects after skin contact
Causes (severe) skin burns. Causes alkali burns.

Symptoms/effects after eye contact
Causes serious eye damage.

Reason for classification
Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general
Harmful to aquatic life.

Acute aquatic toxicity
Not classified

Chronic aquatic toxicity
Not classified

Silicon dioxide, amorphous gel (7631-86-9)
LC50 fish 1  5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])

EC50 Daphnia 1  7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)
12.1. Ammonium hydroxide (1336-21-6)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>0.53 mg/l</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>0.66 mg/l</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>0.75 - 3.4 mg/l</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Silicon dioxide, amorphous gel (7631-86-9)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>(no bioaccumulation expected)</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

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: Landfill. 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

14.1.1. 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

| Transport hazard class(es) (ADR) | Not applicable |

IMDG

| Transport hazard class(es) (IMDG) | Not applicable |

IATA

| Transport hazard class(es) (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 |
SILICON DIOXIDE, amorphous GEL, 40% in water
Safety Data Sheet

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 : No supplementary information available

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
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany
Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-list van kankerverwekkende stoffen : None of the components are listed
SZW-list van mutagene stoffen : None of the components are listed
NIET-limiteervolle lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed
NIET-limiteervolle lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed
NIET-limiteervolle lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

Denmark
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>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>Not Determined, No Data</td>
</tr>
<tr>
<td>NA</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>LD</td>
<td>Lethal Dose</td>
</tr>
<tr>
<td>LC</td>
<td>Lethal Concentration</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimates</td>
</tr>
<tr>
<td>H</td>
<td>hour</td>
</tr>
<tr>
<td>°</td>
<td>°C unless otherwise stated</td>
</tr>
<tr>
<td>mm</td>
<td>millimeters</td>
</tr>
<tr>
<td>Hg, torr</td>
<td></td>
</tr>
<tr>
<td>PEL</td>
<td>permissible exposure level</td>
</tr>
<tr>
<td>TWA</td>
<td>time weighted average</td>
</tr>
<tr>
<td>TG</td>
<td>Test Guideline</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>HMIS</td>
<td>Hazardous Material Information System</td>
</tr>
<tr>
<td>CAS No.</td>
<td>Chemical Abstract Service Registration Number</td>
</tr>
<tr>
<td>EC No.</td>
<td>European Commission Registration Number</td>
</tr>
<tr>
<td>EC Index No.</td>
<td>European Commission Index Number</td>
</tr>
<tr>
<td>OECD</td>
<td>The Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>GHS</td>
<td>The Globally Harmonized System of Classification and Labelling</td>
</tr>
<tr>
<td>APF</td>
<td>Assigned Protection Factor</td>
</tr>
</tbody>
</table>

**Other information:** Prepared by safety and environmental affairs.

**Full text of H- and EUH-statements:**

- **Aquatic Acute 1:** Hazardous to the aquatic environment — Acute Hazard, Category 1
- **Eye Irrit. 2:** Serious eye damage/eye irritation, Category 2
- **Skin Corr. 1B:** Skin corrosion/irritation, Category 1B
- **Skin Irrit. 2:** Skin corrosion/irritation, Category 2
- **STOT SE 3:** Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
- **H314:** Causes severe skin burns and eye damage.
- **H315:** Causes skin irritation.
- **H319:** Causes serious eye irritation.
- **H335:** May cause respiratory irritation.
- **H400:** Very toxic to aquatic life.