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

1.1. Product identifier
- **Product form**: Substance
- **Physical state**: Solid
- **Substance name**: SODIUM MONTMORILLONITE CLAY
- **Product code**: SIS6985.0
- **Formula**: (Na,0.5Ca)0.7(Al,Mg,Fe)4(Si,Al)8O20(OH)4∙XH2O
- **Synonyms**: BENTONITE; MONTMORILLONITE; ALUMINIUM SILICATE
- **Chemical family**: INORGANIC SILICATE

1.2. Relevant identified uses of the substance or mixture and uses advised against
- **Use of the substance/mixture**: Chemical intermediate
  - For research and industrial use only

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

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 (GHS-US)**: Not classified

2.2. Label elements
- **GHS-US labeling**: No labeling applicable

2.3. Other hazards
- **No additional information available**

2.4. Unknown acute toxicity (GHS US)
- **No data available**

SECTION 3: Composition/information on ingredients

3.1. Substance
- **Substance type**: Multi-constituent
- **Name**: SODIUM MONTMORILLONITE CLAY
- **CAS No**: 1318-93-0
- **EC no**: 215-288-5

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montmorillonite</td>
<td>(CAS No) 1318-93-0</td>
<td>97 - 100</td>
<td>Not classified</td>
</tr>
<tr>
<td>Silicon dioxide</td>
<td>(CAS No) 7631-86-9</td>
<td>&lt; 3</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

3.2. Mixture
- **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.
# SODIUM MONTMORILLONITE CLAY
## Safety Data Sheet

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First-aid measures after inhalation</strong></td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.</td>
</tr>
<tr>
<td><strong>First-aid measures after skin contact</strong></td>
<td>Wash with plenty of soap and water. Get medical advice/attention.</td>
</tr>
<tr>
<td><strong>First-aid measures after eye contact</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>First-aid measures after ingestion</strong></td>
<td>Never give anything by mouth to an unconscious person. Get medical advice/attention.</td>
</tr>
</tbody>
</table>

4.2. **Most important symptoms and effects, both acute and delayed**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms/injuries after inhalation</strong></td>
<td>May cause irritation to the respiratory tract. Exposure to respirable silica can cause silicosis, a fibrosis (scarring) of the lungs.</td>
</tr>
<tr>
<td><strong>Symptoms/injuries after skin contact</strong></td>
<td>May cause skin irritation. There is evidence that silica can exacerbate scleroderma, an immune disorder of the skin.</td>
</tr>
<tr>
<td><strong>Symptoms/injuries after eye contact</strong></td>
<td>May cause eye irritation. May cause abrasion of cornea.</td>
</tr>
<tr>
<td><strong>Symptoms/injuries after ingestion</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Chronic symptoms</strong></td>
<td>There are small amounts of silica in this product. Silicosis can occur after many years of exposure to relatively low levels of airborne respirable silica. IARC has concluded that there was sufficient evidence of the carcinogenicity of crystalline silica to experimental animals, but that there was limited evidence of carcinogenicity of crystalline silica to humans.</td>
</tr>
</tbody>
</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**

- Suitable extinguishing media: Not combustible.
- Unsuitable extinguishing media: None known.

5.2. **Special hazards arising from the substance or mixture**

- **Fire hazard**: None known.

5.3. **Advice for firefighters**

- **Protection during firefighting**: Avoid contact with skin and eyes. Do not breathe dust.

## 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 product 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**: 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**

- **Additional hazards when processed**: While not flammable, the ability of fumed silica to generate static charge may present a hazard when used in combination with flammable liquids.
- **Precautions for safe handling**: Avoid contact with skin and eyes. Do not breathe dust. Avoid dust formation. Provide local exhaust or general room ventilation to minimize exposure to dust. **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**: None known.
- **Storage area**: Store in a well-ventilated place. Store away from heat.
SODIUM MONTMORILLONITE CLAY
Safety Data Sheet

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montmorillonite (1318-93-0)</td>
<td>10 mg/m³</td>
<td>15 mg/m³ nuisance dust</td>
</tr>
<tr>
<td>Silicon dioxide (7631-86-9)</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA ACGIH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>6 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA OSHA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA IDLH</td>
<td>3000 mg/m³</td>
<td></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: Safety glasses. 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value or Available Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Powder</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.48</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=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>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</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>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt; 0.01 mm Hg @ 20°C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>2.3</td>
</tr>
<tr>
<td>VOC content</td>
<td>0 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water.</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>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion 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
None known.

10.6. Hazardous decomposition products
None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

Silicon dioxide (7631-86-9)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 2.2 mg/l (Exposure time: 1 h)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Silicon dioxide (7631-86-9) IARC group : 3 - Not classifiable

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
Symptoms/injuries after inhalation : May cause irritation to the respiratory tract. Exposure to respirable silica can cause silicosis, a fibrosis (scarring) of the lungs.
Symptoms/injuries after skin contact : May cause skin irritation. There is evidence that silica can exacerbate scleroderma, an immune disorder of the skin.
Symptoms/injuries after eye contact : May cause eye irritation. May cause abrasion of cornea.
Symptoms/injuries after ingestion : No information available.
Chronic symptoms : There are small amounts of silica in this product. Silicosis can occur after many years of exposure to relatively low levels of airborne respirable silica. IARC has concluded that there was sufficient evidence of the carcinogenicity of crystalline silica to experimental animals, but that there was limited evidence of carcinogenicity of crystalline silica to humans.

SECTION 12: Ecological information

12.1. Toxicity

Silicon dioxide (7631-86-9)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

Silicon dioxide (7631-86-9)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</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. Other adverse effects

Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.
Waste disposal recommendations : Landfill. 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

Not regulated for transport.

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

SODIUM MONTMORILLONITE CLAY (1318-93-0)

TSCA Exemption/Exclusion : Exempt-Naturally Occurring Substances in accordance with 40 CFR 710.4(b).

Montmorillonite (1318-93-0)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Silicon dioxide (7631-86-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

Montmorillonite (1318-93-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Silicon dioxide (7631-86-9)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on Turkish inventory of chemical substances

15.3. US State regulations

SODIUM MONTMORILLONITE CLAY(1318-93-0)

<table>
<thead>
<tr>
<th>State</th>
<th>Carcinogens</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity - Female</th>
<th>Reproductive Toxicity - Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>U.S. - California</td>
<td>Yes</td>
<td>No</td>
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<td>U.S. - California</td>
<td>Yes</td>
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<td>U.S. - California</td>
<td>Yes</td>
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<td>No</td>
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<td>No</td>
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<tr>
<td>U.S. - California</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
SODIUM MONTMORILLONITE CLAY
Safety Data Sheet

SODIUM MONTMORILLONITE CLAY (1318-93-0)

Toxicity - Male

<table>
<thead>
<tr>
<th>Montmorillonite (1318-93-0)</th>
<th>No</th>
<th>No</th>
<th>No</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Carcinogens List</td>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
<td>No significance risk level (NSRL)</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Silicon dioxide (7631-86-9)

<table>
<thead>
<tr>
<th>No</th>
<th>No</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Carcinogens List</td>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
</tr>
</tbody>
</table>

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.

HMIS III Rating

Health: 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability: 0 Minimal Hazard
Physical: 0 Minimal Hazard

Prepared by safety and environmental affairs.

Date of issue: 09/08/2015  
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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