SECTION 1: Identification

1.1. Identification

Product name: HM 4001 RTU ANTIMICROBIAL
Product code: HM4001
Product form: Mixture
Physical state: Liquid
Formula: C23H52ClNO3Si
Synonyms: 3-(TRIHYDROXYSILYL)PROPYLDIMETHYLOCTADECYL AMMONIUM CHLORIDE OCTADECYL(DIMETHYLOCTADECYL)AMMONIUM CHLORIDE, 84% active condensed. 3-(TRIHYDROXYSILYL)PROPYLDIMETHYLOCTADECYL AMMONIUM CHLORIDE, 1% AQUEOUS SOLUTION. SILSESQUIOXANES, 3-(DIMETHYLOCTADECYLAMMONIO)PROPYL, HYDROXY-TERMINATED, CHLORIDES.
Chemical family: ORGANOTRIHYDROXYSILANE

1.2. Recommended use and restrictions on use

Recommended use: Antimicrobial product

1.3. Supplier

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: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification: Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling: No labeling applicable

2.3. Hazards not otherwise classified (HNOC)

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>99</td>
<td>Not classified</td>
</tr>
<tr>
<td>3-(Trihydroxysilyl)propyldimethyloctadecyl ammonium chloride</td>
<td>(CAS-No.) 199111-50-7</td>
<td>1</td>
<td>Eye Irrit. 2B, H320</td>
</tr>
</tbody>
</table>

Full text of hazard classes and 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.

First-aid measures after inhalation: If you feel unwell, seek medical advice. Remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact: Wash with plenty of soap and 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: Get medical advice/attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects after inhalation: No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of inhalation exposure.
Symptoms/effects after skin contact: No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of skin exposure.
Symptoms/effects after eye contact: May cause mild eye irritation.
Symptoms/effects after ingestion: No information available.

4.3. Immediate medical attention and special treatment, if necessary
No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media
Unsuitable extinguishing media: None known.

5.2. Specific hazards arising from the chemical
Fire hazard: Not flammable.

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
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 vapor 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
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Keep in suitable, closed containers 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: Use personal protective equipment as required.
Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container tightly closed. Store at ambient temperature of 25° C.
Incompatible materials: Oxidizing agent.
Storage area: The liquid may freeze if stored outside. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Appropriate engineering controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.
8.3. Individual protection measures/Personal protective equipment

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 or safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. N95 Particulate Respirator

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless.</td>
</tr>
<tr>
<td>Odor</td>
<td>None.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
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</tr>
<tr>
<td>pH</td>
<td>2 - 4</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
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</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>&gt; 200 °F</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>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.02</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>0 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</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
No additional information available

10.5.  Incompatible materials
Oxidizing agent.

10.6.  Hazardous decomposition products
Organic acid vapors. 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 |
| LD50 dermal rabbit | LD50 > 5000 mg/kg |
| LC50 inhalation rat (mg/l) | LC50 > 2.19 mg/l |

| Skin corrosion/irritation | Not classified |
| pH: 2 - 4 |
| Serious eye damage/irritation | Not classified |
| pH: 2 - 4 |
| Respiratory or skin sensitization | Not classified |
| Germ cell mutagenicity | Not classified |
| Carcinogenicity | None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen. |

11.2.  Reproductive toxicity
Not classified

11.3.  Specific target organ toxicity – single exposure
Not classified

11.4.  Specific target organ toxicity – repeated exposure
Not classified

11.5.  Aspiration hazard
Not classified

11.6.  Symptoms/effects after inhalation
No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of inhalation exposure.

11.7.  Symptoms/effects after skin contact
No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of skin exposure.

11.8.  Symptoms/effects after eye contact
May cause mild eye irritation.

11.9.  Symptoms/effects after ingestion
No information available.

SECTION 12: Ecological information

12.1.  Toxicity
No additional information available

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.  Other adverse effects
Effect on the ozone layer
No additional information available

SECTION 13: Disposal considerations

13.1.  Disposal methods

| Sewage disposal recommendations | Do not dispose of waste into sewer. |
| Product/Packaging disposal recommendations | Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility. |
Additional information: Improper disposal of pesticides or pesticide residues is a violation of US Federal law. Preferred option for disposal of waste pesticides is incineration at a licensed and permitted facility.

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**

**HM 4001 RTU ANTIMICROBIAL (199111-50-7)**

<table>
<thead>
<tr>
<th>EPA FIFRA Registration</th>
<th>HM 4001 is a Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) regulated antimicrobial, EPA registration number 83019-2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA Exemption/Exclusion</td>
<td>This substance is excluded from U.S. TSCA notification requirements according to 40 CFR 720.30(a).</td>
</tr>
</tbody>
</table>

**Water (7732-18-5)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

**3-(Trihydroxysilyl)propyldimethyloctadecyl ammonium chloride (199111-50-7)**
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

**15.2. International regulations**

**CANADA**

**Water (7732-18-5)**
Listed on the Canadian DSL (Domestic Substances List)

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Uncontrolled product according to WHMIS classification criteria</th>
</tr>
</thead>
</table>

**EU-Regulations**

**Water (7732-18-5)**
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**National regulations**

**Water (7732-18-5)**
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
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 INSQ (Mexican National Inventory of Chemical Substances)

**15.3 US State regulations**

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

**SECTION 16: Other information**

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H320</th>
<th>Causes eye irritation</th>
</tr>
</thead>
</table>

Print date: 04/10/2019  EN (English US)  SDS ID: HM4001
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
- 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

Hazard Rating

Health: 0 Minimal Hazard - No significant risk to health
Flammability: 0 Minimal Hazard - Materials that will not burn
Physical: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.

Date of issue: 03/19/2014    Revision date: 09/26/2018    Version: 2.2

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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Print date: 04/10/2019 EN (English US) SDS ID: HM4001