

**HM 4100 ANTIMICROBIAL**

Safety Data Sheet HM4100

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Version: 4.0

SECTION 1: Identification**1.1. Identification**

Product name : HM 4100 ANTIMICROBIAL
 Product code : HM4100
 Product form : Substance
 Physical state : Solid
 Formula : C₂₃H₅₂CINO₃Si
 Synonyms : BIOSAFE® QUATERNARY SILOXANE POWDER
 3-(TRIHYDROXSILYL)PROPYLDIMETHYLOCTADECYL AMMONIUM CHLORIDE
 OCTADECYLDIMETHYL(3-TRIHYDROXSILYLPROPYL)AMMONIUM CHLORIDE, 84%
 active condensed
 SILSESQUIOXANES, 3-(DIMETHYLOCTADECYLAMMONIO)PROPYL, HYDROXY-
 TERMINATED, CHLORIDES
 Chemical family : ORGANOTRIHYDROXSILANE

1.2. Recommended use and restrictions on use

Recommended use : Antimicrobial product

1.3. Supplier**GELEST BIOSYSTEMS, LLC.**

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**

Serious eye damage/eye irritation Category 2B H320 Causes eye irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements**GHS US labeling**

Signal word (GHS US) : Warning
 Hazard statements (GHS US) : H320 - Causes eye irritation
 May form combustible dust concentrations in air
 Precautionary statements (GHS US) : P264 - Wash hands thoroughly after handling.
 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.
 Keep away from all ignition sources including heat, sparks and flame.
 Keep container closed and grounded.
 Prevent dust accumulations to minimize explosion hazard.

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**

Substance type : Mono-constituent
 Name : HM 4100 ANTIMICROBIAL
 CAS-No. : 199111-50-7

Name	Product identifier	%	GHS US classification
3-(Trihydroxysilyl)propyl dimethyloctadecyl ammonium chloride	(CAS-No.) 199111-50-7	81 - 100	Eye Irrit. 2B, H320

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Full text of hazard classes and 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 : 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. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Get medical advice/attention if you feel unwell. 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 : Causes eye irritation.
- Symptoms/effects after ingestion : No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of ingestion.

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

- Suitable extinguishing media : Water spray. Foam. Carbon dioxide. Dry chemical.
- Unsuitable extinguishing media : None known.

5.2. Specific hazards arising from the chemical

- Fire hazard : Combustible Dust. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
- Explosion hazard : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. 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 : Collect spillage. Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust clouds. Avoid dispersal of dust in the air (i.e. clearing dust surfaces with compressed air). Nonsparking tools should be used.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.
- Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe dust. Do not create dust clouds. Use personal protective equipment as required. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
- Hygiene measures : 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.
- Incompatible materials : Peroxides. Oxidizing agent. Alcohols. Acids.
- Storage area : Store away from heat. Keep container tightly closed.

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

- Physical state : Solid
- Appearance : White crystalline powder.
- Color : White. Straw yellow.
- Odor : Slight. Amine-like.
- Odor threshold : No data available
- Refractive index : No data available
- pH : No data available
- Relative evaporation rate (butyl acetate=1) : Not volatile
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : > 200 °F
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : Combustible dust
- Vapor pressure : No data available
- Relative vapor density at 20 °C : No data available
- Relative density : No data available
- Specific gravity / density : 0.335 g/ml

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% Volatiles	: 0 %
Solubility	: Water: < 6 % @ 25 °C
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Kst = 228 bar-meters/second; Pmax = 7.5 bars.
Oxidizing properties	: No data available
Explosion limits	: Minimum Explosible Concentration = <125 g/m ³ Minimum Ignition Energy = <30 millijoules

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 when stored in sealed containers.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Peroxides. Oxidizing agent. Alcohols. Acids.

10.6. Hazardous decomposition products

Organic acid vapors. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

3-(Trihydroxysilyl)propyldimethyloctadecyl ammonium chloride (199111-50-7)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5050 mg/kg
LC50 inhalation rat (mg/l)	> 2.19 mg/l

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes eye irritation.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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/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 : Causes eye irritation.

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

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to fish and aquatic invertebrates.

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.

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 4100 ANTIMICROBIAL (199111-50-7)

EPA FIFRA Registration

HM 4100 is a Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) regulated antimicrobial, EPA registration number 83019-1.

TSCA Exemption/Exclusion

This is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels on non-pesticide chemicals. Following is the hazard information as required on the pesticide label:
CAUTION
Causes moderate eye irritation
Avoid contact with eyes or clothing
Wear goggles or safety glasses.
Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
This pesticide is toxic to fish and aquatic invertebrates. This substance is excluded from U.S. TSCA notification requirements according to 40 CFR 720.30(a).

3-(Trihydroxysilyl)propyldimethyloctadecyl ammonium chloride (199111-50-7)

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

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15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

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::

H320

Causes eye irritation

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.

Hazard Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

Flammability

: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

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.

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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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