

**HM 4100 ANTIMICROBIAL**

Safety Data Sheet HM4100

Date of issue: 26/03/2014

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Version: 4.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

| | |
|-----------------|---|
| Product form | : Substance |
| Physical state | : Solid |
| Substance name | : HM 4100 ANTIMICROBIAL |
| Product code | : HM4100 |
| Type of product | : Pure substance |
| Formula | : C23H52CINO3Si |
| Synonyms | : BIOSAFE® QUATERNARY SILOXANE POWDER 3-(TRIHYDROXYSILYL)PROPYLDIMETHYLOCTADECYL AMMONIUM CHLORIDE OCTADECYLDIMETHYL(3-TRIHYDROXYSILYLPROPYL)AMMONIUM CHLORIDE, 84% active condensed SILSESQUIOXANES, 3-(DIMETHYLOCTADECYLAMMONIO)PROPYL, HYDROXY- TERMINATED, CHLORIDES |
| Chemical family | : ORGANOTRIHYDROXYSILANE |

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 : Antimicrobial product

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet**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**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]**

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

EUH-statements : EUH210 - Safety data sheet available on request.

2.3. Other hazards

No additional information available

HM 4100 ANTIMICROBIAL

Safety Data Sheet

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 | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|-----------------------|----------|---|
| 3-(Trihydroxysilyl)propyldimethyloctadecyl ammonium chloride | (CAS-No.) 199111-50-7 | 81 - 100 | Not classified |

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 : 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 person to fresh air and keep comfortable for breathing.
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. 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, both 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. 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 : Water spray. Foam. Carbon dioxide. Dry chemical.
Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

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. Advice for firefighters

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.

HM 4100 ANTIMICROBIAL

Safety Data Sheet

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.

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.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

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 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.

Colour : White. Straw yellow.

Odour : Slight. Amine-like.

HM 4100 ANTIMICROBIAL

Safety Data Sheet

| | |
|--|---|
| Odour threshold | : No data available |
| Refractive index | : No additional information available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=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 |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Density | : 0.335 g/ml |
| % 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. |
| Oxidising properties | : No data available |
| Explosive 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 : Not classified

Respiratory or skin sensitisation : 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.

HM 4100 ANTIMICROBIAL

Safety Data Sheet

| | |
|-------------------------------------|--|
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : Not classified |
| STOT-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. |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|--------------------------|--|
| Ecology - water | : Toxic to fish and aquatic invertebrates. |
| Acute aquatic toxicity | : Not classified |
| Chronic aquatic toxicity | : Not classified |

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. 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

| | |
|--|---|
| 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

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. 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

HM 4100 ANTIMICROBIAL

Safety Data Sheet

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

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

No REACH Annex XVII restrictions

HM 4100 ANTIMICROBIAL is not on the REACH Candidate List

HM 4100 ANTIMICROBIAL is not on the REACH Annex XIV List

% Volatiles : 0 %

15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

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

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

HM 4100 ANTIMICROBIAL

Safety Data Sheet

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

15.2. Chemical safety assessment

No additional information available

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; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

| | |
|--------|---|
| EUH210 | Safety data sheet available on request. |
|--------|---|

SDS EU (REACH Annex II) - Custom

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