SAFETY DATA SHEET
GELTONE® II

Revision Date: 21-Jan-2016
Revision Number: 49

1. Product and Company Identification

Product Name
Product Trade Name: GELTONE® II

Other Names
Synonyms: None
Product Code: HM003654

Recommended Use
Recommended Use: Viscosifier
Uses Advised Against: No information available

Company Name, Address and Contact Details
Manufacturer/Supplier: Halliburton New Zealand
1 Paraite Rd,
Bell Block, New Plymouth
New Zealand Registration No.: 824207

E-Mail address: fdunexchem@halliburton.com
Emergency Telephone Number: +64 800 451719
New Zealand National Poisons Centre: 0800 764 766 (24 hours)

2. Hazard(s) Identification

Statement of Hazardous Nature
Classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulation 2001;
Not Classified as dangerous good according to NZS 5433:2012, UN, IMDG or IATA

Classification
6.7A Known or presumed human carcinogens
6.9B Harmful to human target organs or systems

Hazard and Precautionary Statements

Hazard Pictograms

Signal Word: Danger

Hazard Statements
H350 - May cause cancer by inhalation
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements
Prevention
P103 - Read label before use
P104 - Read Safety Data Sheet before use.
P201 - Obtain special instructions before use
GELTONE® II

P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P281 - Use personal protective equipment as required

Response
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical attention/advice if you feel unwell

Storage
P405 - Store locked up

Disposal
P501 - Dispose of contents/container to an approved landfill

Contains

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Substance HSNO Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>6.7A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.9A</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>6.3A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.4A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.1A</td>
</tr>
</tbody>
</table>

2.3. Other Hazards
Dust can form an explosive mixture in air
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

3. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>PERCENT (w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>0.1 - 1%</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

Requirements for First Aid or Medical Care
Inhalation
If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin
Wash with soap and water. Get medical attention if irritation persists.

Ingestion
Under normal conditions, first aid procedures are not required.

Workplace Facilities Required
None

Relation to Health Effect
Most Important Symptoms/Effects
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

Medical Attention and Special Treatment
Notes to Physician
Treat symptomatically

5. Fire-fighting measures

Type of Hazard
Flammability Hazard
Non-flammable

5.1. Extinguishing media
Suitable Extinguishing Media
All standard fire fighting media
Extinguishing media which must not be used for safety reasons
None known.
HAZCHEM Code
Hazchem Code: None Allocated

Special Protective Equipment and Precautions for Fire Fighters

Special Protective Equipment for Fire-Fighters
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Special Exposure Hazards
Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

6. Spillage, Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

See Section 8 for additional information

6.2. Environmental precautions
Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up
Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

6.4. Reference to other sections
See Section 8 for additional information.

7. Handling and storage

7.1. Precautions for Safe Handling
Handling Precautions
This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

Handling Practices
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

Approved Handlers
If more than 10 kg (Class 6) is present, then an approved handler must be present when the substance is being handled and when not in use, the substance must be locked away.

7.2. Conditions for safe storage, including any incompatibilities
Store locked up. Store in a cool, dry location. Store in a well ventilated area. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Keep container closed when not in use. Do not reuse empty container. Product has a shelf life of 24 months.

Store Site Requirements
No special controls required

Packaging
No special packaging required

8. Exposure Controls and Personal Protection

Workplace Exposure Standards

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>New Zealand WES</th>
<th>ACGIH TLV-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>TWA: 0.2 mg/m³</td>
<td>TWA: 0.025 mg/m³</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Engineering Controls
Engineering Controls
Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Personal Protective Equipment (PPE)
Respiratory Protection
Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

Hand Protection
None known.

Skin Protection
Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection
Wear safety glasses or goggles to protect against exposure.

Other Precautions
None known.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Powder</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Color</td>
<td>Tan</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing Point/Range</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.6</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

9.2. Other information
VOC Content (%)
No data available

10. Stability and Reactivity

10.2. Chemical Stability
Stable

10.4. Conditions to Avoid
None anticipated

10.5. Incompatible Materials
Hydrofluoric acid.

10.6. Hazardous Decomposition Products
Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Hazardous Reactions
Hazardous Polymerization: Will Not Occur

11. Toxicological Information

Health Effect from Likely Routes of Exposure
Acute Toxicity
Inhalation

Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See “Chronic Effects/Carcinogenicity” subsection below).

Eye Contact

May cause mechanical irritation to eye.

Skin Contact

None known.

Ingestion

Irritation of the mouth, throat, and stomach.

Chronic Effects/Carcinogenicity

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2). There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

Toxicity Data

Toxicology data for the components

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>&gt;15,000 mg/kg (Human)</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methyamines</td>
<td>61788-63-4</td>
<td>&gt; 2000 mg/kg (Rat)</td>
<td>&gt; 2000mg/kg (Rat)</td>
<td>&gt; 180 mg/L (Rat) 1h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Skin corrosion/irritation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>Non-irritating to the skin</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methyamines</td>
<td>61788-63-4</td>
<td>Causes moderate skin irritation. (Rabbit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Eye damage/irritation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>Mechanical irritation of the eyes is possible.</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methyamines</td>
<td>61788-63-4</td>
<td>Causes moderate eye irritation. (Rabbit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Skin Sensitization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>No information available.</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methyamines</td>
<td>61788-63-4</td>
<td>Did not cause sensitization on laboratory animals (guinea pig)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Respiratory Sensitization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>No information available.</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methyamines</td>
<td>61788-63-4</td>
<td>No information available.</td>
</tr>
<tr>
<td>Substances</td>
<td>CAS Number</td>
<td>Mutagenic Effects</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>Not regarded as mutagenic.</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Carcinogenic Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Reproductive toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>STOT - single exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>No significant toxicity observed in animal studies at concentration requiring classification.</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Aspiration hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### 12. Ecological Information

#### 12.1. Toxicity

**Ecotoxicity Effects**

**Product Ecotoxicity Data**

No data available

**Substance Ecotoxicity Data**

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Toxicity to Invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>No information available</td>
<td>LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)</td>
<td>No information available</td>
<td>LL50 (24h) &gt; 10,000 mg/L (Daphnia magna) (similar substance)</td>
</tr>
<tr>
<td>Bis(hydrogenated tallow alkyl) methylamines</td>
<td>61788-63-4</td>
<td>ErC50 (72h) 0.12 mg/L (Selenastrum capricornutum)</td>
<td>LC50 (96h) &gt; 1000 mg/L (Brachydanio rerio)</td>
<td>No information available</td>
<td>EC50 (48h) 50 mg/L (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EC50 (48h) 35.2 mg/L (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EC50 (48h) 10 mg/L (Daphnia magna)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

**Substances**

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>Persistence and Degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>The methods for determining biodegradability are not applicable to inorganic substances.</td>
</tr>
</tbody>
</table>
12.3. Bioaccumulative potential

**Substances**

**CAS Number**

Crystalline silica, quartz 14808-60-7
Bis(hydrogenated tallow alkyl) methylamines 61788-63-4

**Log Pow**

Crystalline silica, quartz No data available
Bis(hydrogenated tallow alkyl) methylamines No data available

12.4. Mobility in soil

**Substances**

**CAS Number**

Crystalline silica, quartz 14808-60-7
Bis(hydrogenated tallow alkyl) methylamines 61788-63-4

**Mobility**

Crystalline silica, quartz No information available
Bis(hydrogenated tallow alkyl) methylamines No information available

Ecotoxicity Hazard Statements

None known

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

13.1. Waste treatment methods

**Disposal Method**

Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

14. Transport Information

**IMDG/IMO**

**UN Number:** Not restricted
**UN Proper Shipping Name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**NZ 5433.1999**

**UN Number:** Not restricted
**UN Proper Shipping Name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable

**IATA/ICAO**

**UN Number:** Not restricted
**UN Proper Shipping Name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable

**Special Precautions for User:** None

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

15. Regulatory Information

**New Zealand Inventory of Chemicals**

All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate.

**HSNO Approval Number**

HSR002512

**Group Name**

Additives, Process Chemicals and Raw Materials (Toxic 6.7 HSR002512)

**HSNO Controls**

Refer to the NZ EPA website for more information: http://www.epa.govt.nz

**Approved Handlers**

If more than 10 kg (Class 6) is present, then an approved handler must be present when
the substance is being handled and when not in use, the substance must be locked away.

Poisons Schedule: None Allocated

16. Other information

The following sections have been revised since the last issue of this SDS
Not applicable

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms


Key literature references and sources for data

www.ChemADVISOR.com/
NZ CCID

Revision Date: 21-Jan-2016

Revision Note

SDS sections updated:

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Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet