1. Product and Company Identification

Material name: SUPER GEL-X®
Version #: 17
Revision date: 08-August-2012
CAS #: 1302-78-9
Synonym(s): Smectite * Bentonite * Bentonite, Sodian * Bentonite, Calcian * Sodium-activated Bentonite * Montmorillonite

Manufacturer information:
CETCO
Drilling Products Group
2870 Forbs Avenue
Hoffman Estates, IL 60192 United States
safetydata@amcol.com
http://www.cetco.com/
General Information (800) 527-9948
CHEMTREC® (800) 424-9300

2. Hazards Identification

Potential health effects:
- **Eyes**: Dust or powder may irritate eye tissue. Mild irritant to eyes (according to the modified Kay & Calandra criteria).
- **Inhalation**: Inhalation of dusts may cause respiratory irritation.
- **Ingestion**: No significant adverse effects are expected upon ingestion of the product.

Signs and symptoms: None known.

3. Composition / Information on Ingredients

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

<table>
<thead>
<tr>
<th>Constituents</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMECTITE GROUP MINERALS</td>
<td>1318-93-0</td>
<td></td>
</tr>
<tr>
<td>CALCIUM CARBONATE</td>
<td>471-34-1</td>
<td></td>
</tr>
<tr>
<td>QUARTZ</td>
<td>14808-60-7</td>
<td>&lt;= 8</td>
</tr>
<tr>
<td>CRISTOBALITE</td>
<td>14464-46-1</td>
<td>&lt;= 2</td>
</tr>
</tbody>
</table>

Composition comments: The purity of the product is 100% w/w. Impurities are not applicable for a UVCB substance.

4. First Aid Measures

First aid procedures:
- **Eye contact**: No specific first aid measures noted. Flush thoroughly with water. If irritation occurs, get medical assistance.
- **Skin contact**: No specific first aid measures noted. Wash skin with soap and water. Get medical attention if irritation develops and persists.
- **Inhalation**: No specific first aid measures noted. Move to fresh air. Call a physician if symptoms develop or persist.
- **Ingestion**: No specific first aid measures noted. Rinse mouth thoroughly. Get medical attention if any discomfort occurs.

Notes to physician: Provide general supportive measures and treat symptomatically.

General advice: No hazards which require special first aid measures. Provide general supportive measures and treat symptomatically.

5. Fire Fighting Measures

Flammable properties: The product is not flammable.
Extinguishing media

Suitable extinguishing media
Use any media suitable for the surrounding fires.

Unsuitable extinguishing media
Not applicable, non-combustible.

Protection of firefighters

Specific hazards arising from the chemical
None known. The product itself does not burn.

Protective equipment and precautions for firefighters
None known.

Fire fighting equipment/instructions
Material can be slippery when wet.

6. Accidental Release Measures

Personal precautions
No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.

Environmental precautions
No special environmental precautions required. Prevent further leakage or spillage if safe to do so.

7. Handling and Storage

Handling
Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. In case of insufficient ventilation, wear suitable respiratory equipment.

Storage
Store in a dry area. Keep the container dry. No special restrictions on storage with other products.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>INERT OR NUISANCE DUSTS (SEQ250)</td>
<td>TWA</td>
<td>3 mg/m3</td>
<td>Respirable particles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td>Inhalable particles.</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>INERT OR NUISANCE DUSTS (SEQ250)</td>
<td>PEL</td>
<td>5 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m3</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-3 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>INERT OR NUISANCE DUSTS (SEQ250)</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m3</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 mppcf</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mppcf</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

Engineering controls
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn.

Personal protective equipment

Eye / face protection
Wear dust-resistant safety goggles where there is danger of eye contact.

Skin protection
No special protective equipment required. Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection
Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit.

General hygiene considerations
Use good industrial hygiene practices in handling this material.

9. Physical & Chemical Properties

Appearance
Lump, granular or fine powder.

Physical state
Solid.
Form: Various.  
Color: Various.  
Odor: None.  
Odor threshold: Not applicable.  
pH: 8.5 - 11  
Vapor pressure: Not applicable.  
Vapor density: Not applicable.  
Boiling point: Not applicable.  
Melting point/Freezing point: > 842 °F (> 450 °C) / Not applicable.  
Solubility (water): < 0.9 mg/l  
Specific gravity: Not applicable.  
Relative density: 2.6 g/cm³  
Flash point: Not applicable.  
Flammability limits in air, upper, % by volume: Not applicable.  
Flammability limits in air, lower, % by volume: Not applicable.  
Auto-ignition temperature: Not applicable.  
VOC: 0 %  
Viscosity: Not applicable.  
Viscosity temperature: Not applicable.  
Percent volatile: 0 %  
Partition coefficient (n-octanol/water): Not applicable.  
Flammability (Train fire): Not applicable.  
Bulk density: 0.9 - 1.4 g/cm³  
Molecular weight: Not applicable.  
Molecular formula: UVCB Substance  
Other data  
Decomposition temperature: > 932 °F (> 500 °C)  
Explosive limit: Not applicable.  
Explosive properties: Not explosive  
Explosivity: Not applicable.  
Flame extension: Not applicable.  
Flammability: Not applicable.  
Flammability (flash back): Not applicable.  
Flammability (Heat of combustion): Not applicable.  
Flammability (solid, gas): This product is not flammable.  
Flammability class: Not applicable.  
Flash point class: Not flammable  
Oxidizing properties: None.  
pH in aqueous solution: 8.5 - 11  

10. Chemical Stability & Reactivity Information  
Chemical stability: Stable at normal conditions.  
Conditions to avoid: Moisture.  
Incompatible materials: None known.  
Hazardous decomposition products: None.
11. Toxicological Information

Toxicological data

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bentonite (1302-78-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Inhalation</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 5.27 mg/l, 4 hr, OECD 436</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg, OECD 425</td>
</tr>
</tbody>
</table>

Sensitization: Not classified.

Acute effects: No carcinogenicity data available for this product. Sepiolite was evaluated by IARC as class 3 ("Cannot be classified as to carcinogenicity to humans"). Based on read-across with sepiolite, bentonite was assessed as non-carcinogenic. Therefore classification of bentonite for carcinogenicity is not warranted.

Sensitization: Not classified.

Acute effects: Not classified.

Carcinogenicity: Not classified.

Skin corrosion/irritation: None known.

Mutagenicity: Not classified.

Reproductive effects: Not classified.

Symptoms and target organs: None known.

12. Ecological Information

Ecotoxicological data

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bentonite (1302-78-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crustacea</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50</td>
<td>Daphnia</td>
<td>&gt; 100 mg/l, 48 hours</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50</td>
<td>Freshwater algae</td>
<td>&gt; 100 mg/l, 72 hours</td>
</tr>
<tr>
<td>LC50</td>
<td>Freshwater fish</td>
<td>16000 mg/l, 96 hours</td>
</tr>
<tr>
<td></td>
<td>Marine water fish</td>
<td>2800 - 3200 mg/l, 24 hours</td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Coon stripe shrimp (Pandalus danae)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dungeness or edible crab (Cancer magister)</td>
</tr>
</tbody>
</table>

Persistence and degradability: Not relevant for inorganic substances

Bioaccumulation / Accumulation: Will not bio-accumulate.

Mobility in environmental media: Low water solubility, expected to sink and migrate into the sediment. Expected to partition to sediment and wastewater solids.

13. Disposal Considerations

Disposal instructions: Dispose in accordance with all applicable regulations.

Waste from residues / unused products: Dispose of in accordance with local regulations.

Contaminated packaging: Store containers and offer for recycling of material when in accordance with the local regulations.

14. Transport Information

DOT: Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods.

IMDG: Not regulated as dangerous goods.
15. Regulatory Information

US federal regulations

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2)
Not regulated.

DEA Essential Chemical Code Number
Not regulated.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))
Not regulated.

DEA Exempt Chemical Mixtures Code Number
Not regulated.

CERCLA (Superfund) reportable quantity
None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance
No

Section 311 hazardous chemical
No

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

* A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Recommended restrictions
None known.

Further information
This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

UVCB = a substance of Unknown or Variable composition, Complex reaction products or Biological materials

SWERF = Size Weighted Respirable Fraction methodology is a scientific method developed to quantify the content of respirable particles within a bulk product. All details about the SWERF method are available at www.crystallinesilica.eu.

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 1
Flammability: 0
Instability: 0
Material name: SUPER GEL-X®

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date

20-November-2007

This data sheet contains changes from the previous version in section(s):

- Product and Company Identification: Synonyms
- Composition / Information on Ingredients: Composition comments
- Toxicological Information: Carcinogenicity
- Other Information: Further information