MATERIAL SAFETY DATA SHEET

Product Trade Name: WG-36 GELLING AGENT

Revision Date: 03-Jan-2012

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: WG-36 GELLING AGENT
Synonyms: None
Chemical Family: Polysaccharide
Application: Gelling Agent

Manufacturer/Supplier
Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

Prepared By
Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS Number</th>
<th>PERCENT</th>
<th>ACGIH TLV-TWA</th>
<th>OSHA PEL-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guar gum</td>
<td>9000-30-0</td>
<td>60 - 100%</td>
<td>10 mg/m³</td>
<td>15 mg/m³</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Hazard Overview
May cause eye and respiratory irritation. May cause allergic respiratory reaction. Airborne dust may be explosive.

4. FIRST AID MEASURES

Inhalation
If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

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

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

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

Notes to Physician
Not Applicable
5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Not Determined Min: > 200
Flash Point/Range (C): Not Determined Min: > 93
Flash Point Method: COC
Autoignition Temperature (F): Not Determined
Autoignition Temperature (C): Not Determined
Flammability Limits in Air - Lower (%): Not Determined
Flammability Limits in Air - Upper (%): Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

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

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

NFPA Ratings: Health 1, Flammability 0, Reactivity 0
HMIS Ratings: Health 1, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

Storage Information Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (95%)

Hand Protection Normal work gloves.

Skin Protection Normal work coveralls.

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

Other Precautions None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Color: Off white
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Bean</td>
</tr>
<tr>
<td>pH</td>
<td>6.5-7.5</td>
</tr>
<tr>
<td>Specific Gravity @ 20 C (Water=1):</td>
<td>1.42 - 1.47</td>
</tr>
<tr>
<td>Density @ 20 C (lbs./gallon):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Bulk Density @ 20 C (lbs/ft³):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Boiling Point/Range (F):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Boiling Point/Range (C):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Freezing Point/Range (F):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Freezing Point/Range (C):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Vapor Pressure @ 20 C (mmHg):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Vapor Density (Air=1):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Percent Volatiles:</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate=1):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Solubility in Water (g/100ml):</td>
<td>Soluble</td>
</tr>
<tr>
<td>Solubility in Solvents (g/100ml):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>VOCs (lbs./gallon):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Viscosity, Dynamic @ 20 C (centipoise):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Viscosity, Kinematic @ 20 C (centistrokes):</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Partition Coefficient/n-Octanol/Water:</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Molecular Weight (g/mole):</td>
<td>Not Determined</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

| Stability Data                                | Stable                      |
| Hazardous Polymerization                      | Will Not Occur              |
| Conditions to Avoid                           | None anticipated            |
| Incompatibility (Materials to Avoid)           | Strong oxidizers.           |
| Hazardous Decomposition Products              | Carbon monoxide and carbon dioxide. |
| Additional Guidelines                         | Not Applicable              |

11. TOXICOLOGICAL INFORMATION

| Principle Route of Exposure                   | Eye or skin contact, inhalation. |
| Inhalation                                    | May cause respiratory irritation. May cause allergic respiratory reaction. |
| Skin Contact                                  | None known.                   |
| Eye Contact                                   | May cause eye irritation.     |
| Ingestion                                     | None known.                   |
| Aggravated Medical Conditions                 | None known.                   |
| Chronic Effects/Carcinogenicity               | No data available to indicate product or components present at greater than 1% are chronic health hazards. |
| Other Information                             | None known.                   |
| Toxicity Tests                                |                              |
| Oral Toxicity                                 | Not determined               |
| Dermal Toxicity                               | Not determined               |
12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air): Not determined
Persistence/Degradability: Slowly biodegradable
Bio-accumulation: Not determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Chemical Fate Information: Not determined
Other Information: Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method: Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging: Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted
Other Transportation Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class None

EPA SARA (313) Chemicals This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity Not applicable.

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65 The California Proposition 65 regulations apply to this product.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory Product contains one or more components not listed on the inventory.

WHMIS Hazard Class Un-Controlled

16. OTHER INFORMATION

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

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

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

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***END OF MSDS***

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