



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name HVG-1
Revision Date 12/21/2011
Version # 4
Product Use Water Gelling Agent
Manufacturer / Supplier FRAC TECH SERVICES LLC
2500 HWY 62 West
Chickasha, OK 73018
US
General information: 1-405-222-2300
Emergency 24 Hour Emergency: INFOTRAC: 1-800-535-5053

2. Hazards Identification

Physical State Liquid.
Appearance Opaque Slurry
Emergency Overview Not available.
OSHA regulatory status Combustible liquid as defined by the OSHA standard.
Routes of exposure
Eyes Minor ocular irritant
Skin Prolonged and repeated liquid contact can cause defatting and drying of the skin, which may result in irritation and dermatitis.
Inhalation Based on tests, certain individuals may develop a respiratory allergenic response to guar gum dust. Person with respiratory history may aggravate conditions by exposure to guar gum.
Ingestion Vomiting may result. Pulmonary aspiration hazard if vomiting occurs.
Potential environmental effects Not available.

3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|----------------------|------------|---------|
| Guar Gum | 9000-30-0 | 45- 50 |
| Petroleum Distillate | 64742-47-8 | 45- 55 |
| Clay | 14808-60-7 | 1 - 2 |
| Surfactant | 68439-51-0 | 1 - 2 |

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye Contact Flush at once with large amounts of water for at least 15 minutes. If irritation persists get medical help.
Skin Contact Wash affected area with soap and water. Remove contaminated clothing. Get medical assistance if irritation continues. Wash clothing before reuse.
Inhalation Leave the area to obtain fresh air. If difficulty in breathing persists, summon medical help immediately. If breathing ceases apply CPR techniques and summon medical help.
Ingestion Do NOT induce vomiting. Consult a physician at once. Aspiration of vomitus can cause chemical pneumonitis, which can be fatal.
Notes to physician Not available.

5. Fire Fighting Measures

| | |
|---|---|
| Flammable Properties | Not available. |
| Extinguishing media | |
| Suitable extinguishing media | Water spray, dry chemical or aqueous fire fighting foam. |
| Unsuitable extinguishing media | Not available. |
| Specific Hazards arising from the Chemical | None expected. NFPA Class IIIA combustible liquid. |
| Firefighting equipment / instructions | Self contained breathing apparatus (SCBA) and structural protective clothing will provide limited protection. |
| Specific Methods | Cool exposed equipment with water spray until well after fire is out. |
| Hazardous combustion products | Not available. |

6. Accidental Release Measures

| | |
|--------------------------------|--|
| Personal precautions | Surfaces dusted with this material can become very slippery when wet. Do not smoke. Prevent breathing of vapors. Ventilate the area. |
| Methods for cleaning up | Absorb with inert material and place in chemical waste container. Dike large spills for later disposal. Dispose of in accord with all appropriate regulations. |

7. Handling and Storage

| | |
|-----------------|--|
| Handling | Electrostatic accumulation hazard: when transferring this product there is a potential for accumulation of static electricity. Bonding and grounding of equipment necessary. |
| Storage | Carbon steel is suitable for storage. Store at ambient temperature and pressure. |

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

| Components | TWA | | STEL | |
|----------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Guar Gum | Not available. | Not available. | Not available. | Not available. |
| Petroleum Distillate | Not available. | Not available. | Not available. | Not available. |
| Clay | Not available. | Not available. | Not available. | Not available. |
| Surfactant | Not available. | Not available. | Not available. | Not available. |

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

| Components | PEL | |
|----------------------|----------------|----------------|
| | ppm | mg/m3 |
| Guar Gum | 100 | 525 |
| Petroleum Distillate | Not available. | Not available. |
| Clay | Not available. | Not available. |
| Surfactant | Not available. | Not available. |

Canada. Alberta OELs (Occupational Health Safety Code, Schedule 1, Table 2)

| Components | TWA | | STEL | |
|----------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Guar Gum | Not available. | Not available. | Not available. | Not available. |
| Petroleum Distillate | Not available. | Not available. | Not available. | Not available. |
| Clay | Not available. | Not available. | Not available. | Not available. |
| Surfactant | Not available. | Not available. | Not available. | Not available. |

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

| Components | TWA | | STEL | |
|----------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Guar Gum | Not available. | Not available. | Not available. | Not available. |
| Petroleum Distillate | Not available. | Not available. | Not available. | Not available. |
| Clay | Not available. | Not available. | Not available. | Not available. |
| Surfactant | Not available. | Not available. | Not available. | Not available. |

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents) Components

| Components | TWA | | STEL | |
|----------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Guar Gum | Not available. | Not available. | Not available. | Not available. |
| Petroleum Distillate | Not available. | Not available. | Not available. | Not available. |
| Clay | Not available. | Not available. | Not available. | Not available. |
| Surfactant | Not available. | Not available. | Not available. | Not available. |

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) Components

| Components | TWA | | STEL | |
|----------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Guar Gum | Not available. | Not available. | Not available. | Not available. |
| Petroleum Distillate | Not available. | Not available. | Not available. | Not available. |
| Clay | Not available. | Not available. | Not available. | Not available. |
| Surfactant | Not available. | Not available. | Not available. | Not available. |

Mexico. Occupational Exposure Limit Values

| Components | TWA | | STEL | |
|----------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Guar Gum | Not available. | Not available. | Not available. | Not available. |
| Petroleum Distillate | Not available. | Not available. | Not available. | Not available. |
| Clay | Not available. | Not available. | Not available. | Not available. |
| Surfactant | Not available. | Not available. | Not available. | Not available. |

Engineering controls

Air contaminant levels should be kept below the PEL or TLV for this product. Mechanical ventilation may be necessary if the product is used in enclosed areas and/or at elevated temperatures.

Personal protective equipment

Eye / face protection

Use s face shield and/or chemical splash goggles.

Skin protection

Full protective clothing, boots, and chemical gloves should be worn.

Respiratory protection

NIOSH approved organic vapor air purifying respirator, self-contained breathing apparatus or air supplied respirators depending on concentration.

General hygiene consideration

Not available.

9. Physical and Chemical Properties

| | |
|---|--------------------------|
| Appearance: | Opaque slurry |
| Color | Tan to light yellow |
| Odor | Non-aromatic hydrocarbon |
| Odor threshold | Not available. |
| Physical State | Liquid |
| Form | Liquid |
| pH | Not available. |
| Melting point | Not available. |
| Freezing point | Not available. |
| Boiling point | 475°F (246.11°C) |
| Flash point | 150°F (65.55°C) |
| Evaporation rate | Not available. |
| Flammability limits in air, upper, % by volume | Not available. |
| Flammability limits in air, lower, % by volume | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Specific Gravity | 1.075 |
| Solubility (water) | Completely dispersible. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | 448°F (231°C) |
| Decomposition temperature | Not available. |

| | |
|-------------------------|----------------|
| Bulk Density | 8.97 lb/gal |
| VOC | Not available. |
| Viscosity | Not available. |
| Percent volatile | Not available. |

10. Chemical Stability Reactivity Information

| | |
|--|---|
| Chemical Stability | Stable |
| Conditions to avoid | High temperatures. |
| Incompatible material | May react with strong oxidizers. |
| Hazardous decomposition products | Carbon monoxide and unidentified organic compounds may be formed by combustion. |
| Possibility of hazardous reaction | None. |

11. Toxicology Information

Toxicological Data

| Components | Test Results |
|----------------------|---------------------|
| Guar Gum | Not available. |
| Petroleum Distillate | Not available. |
| Clay | Not available. |
| Surfactant | Not available. |

Sensitization Not available.

Carcinogenicity

| | |
|----------------------|----------------|
| Guar Gum | Not available. |
| Petroleum Distillate | Not available. |
| Clay | Not available. |
| Surfactant | Not available. |

Epidemiology Not available.

Mutagenicity Not available.

Reproductive effects Not available.

Teratogenicity Not available.

Further Information Not available.

12. Ecological Information

Ecotoxicological data

| Components | Test Results |
|----------------------|---------------------|
| Guar Gum | Not available. |
| Petroleum Distillate | Not available. |

| | |
|------------|----------------|
| Clay | Not available. |
| Surfactant | Not available. |

| | |
|--|----------------|
| Ecotoxicity | Not available. |
| Persistence and degradability | Not available. |
| Bioaccumulation / Accumulation | Not available. |
| Mobility in environmental media | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |

13. Disposal Considerations

| | |
|-------------------------------|--|
| Waste codes | Not available. |
| Disposal instructions | If discarded in purchased form, this product is not a RCRA hazardous waste. Liquids with flash point <140°f have RCRA characteristics of ignitability and are classed as hazardous for disposal purposes. The product should be evaluated at the time of disposal to identify any transformation or contamination that may have occurred during use. |
| Contaminated packaging | Do not pressurize or subject containers to any source of heat or spark. Empty drums should be washed and drained and properly disposed of. |

14. Transport Information

DOT

| | |
|--------------------------------|---|
| UN number | None |
| Proper shipping name | Petroleum Distillates |
| Hazard class | None |
| Packing Group | III |
| Labels required | |
| DOT reportable quantity | Not available. |
| Additional information | This product is not regulated as a hazardous material by the US DOT in bulk quantities. It is not regulated for non bulk quantities. Pursuant to 49 CFR 173 120(b)(3) this product is not regulated as a combustible or flammable liquid. ASTM method D 4206 confirms that the product does not support combustion. |
| Special provisions | |
| Packaging exceptions | |
| Packaging non bulk | |
| Packaging bulk | |
| ERG number | |

IATA

| | |
|-------------------------------|--|
| UN number | |
| Proper shipping name | Not dangerous as defined by IATA for air transportation. |
| Hazard class | |
| Packing group | |
| Additional information | |
| ERG code | |

IMDG

| | |
|------------------|--|
| UN number | |
|------------------|--|

Proper shipping name dangerous for water transportation.
Hazard class
Packing group
EmS No
IMDG Additional information:

15. Regulatory Information

US federal regulation

CERCLA (Superfund) Reportable Quantity: Not available.

Superfund amendments and Reauthorization Act of 1986 (SARA)

| | | |
|--------------------------|--------------------|-----|
| Hazard Categories | Immediate Hazard: | No |
| | Delayed Hazard: | No |
| | Fire Hazard: | Yes |
| | Pressure Hazard: | No |
| | Reactivity Hazard: | No |

Section 302 extremely hazardous substance: Not subject to reporting.

Section 313 hazardous chemical: None

Inventory Status

| Country | Inventory Name | On Inventory * |
|-----------------------------|-----------------------|-----------------------|
| Australia | AICS | No |
| Canada | DSL | No |
| Canada | NDSL | No |
| China | IECSC | No |
| Europe | EINECS | No |
| Europe | ELINCS | No |
| Japan | ENCS | No |
| Korea | ECL | No |
| New Zealand | NZI | No |
| United States / Puerto Rico | TSCA | Yes |
| Phillipines | PICCS | No |

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

WHMIS Information Not available.

State Regulation Not available.

16. Other Information

Further Information HMIS® is a registered trade and service mark of the NPCA. Refer to ASTM D4206 for DOT Flammability.

HMIS® ratings Health: 1
 Flammability: 1
 Physical Hazard: 0
 A HMIS® rating including an * indicates a chronic hazard.

NFPA ratings

Health: 1
Flammability: 2
Instability: 0

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