



SAFETY DATA SHEET

Revision: 03/03/2017

1. Identification

Trade Name: High Yield Gel
Description: bentonite drilling mud
Synonyms: Bentonite – Montmorillonite - Smectite
Intended use: Not available
Recommended Restrictions: Workers (and your customers or users in the cases of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

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2. Hazards Identification

Product not classified as hazardous according to US/EU regulations.

Physical Hazards: Not classified
Health Hazards: Not classified
Environmental Hazards: Not classified
OSHA Defined Hazards: Not classified

Label Elements

Hazard Symbol: None
Signal Word: None
Hazard Statement: The substance does not meet the criteria for classification.

Precautionary Statement

Prevention: Observe good industrial hygiene practices.
Response: Wash hands after handling.
Storage: Store away from incompatible materials
Disposal: Dispose of waste in accordance with local authority requirements.

3. Composition/Information on Ingredients

| Substances: | Name & Synonyms | CAS number | % |
|---------------|-------------------|--------------|-------|
| | Trade Secret | Proprietary* | < 0.1 |
| | Bentonite | 1302-78-9 | |
| | Montmorillonite | | |
| | Smectite | | |
| Constituents: | | | |
| | Quartz | 14808-60-7 | <= 8 |
| | Calcium Carbonate | 68476-23-5 | <= 1 |
| | Cristobalite | 14464-46-1 | <= 2 |

- Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition: Occupational Exposure Limits for constituents are listed in section 8. Bentonite is composed mainly of smectite group minerals but the composition is varied, as expected for a UVCB substance, and other mineral constituents will be present in small and varying amounts. These minor constituents are not relevant for classification and labeling. The purity of the product is 100% w/w. Impurities are not applicable for a UVCB substance.

4. First-Aid Measures

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| Inhalation: | Remove the source of contamination or remove the affected to fresh air. Seek medical attention if respiratory symptoms persist. No specific first aid measures noted. |
| Ingestion: | No specific first aid measures noted. |
| Skin: | No hazards which require first aid measures. Wash the skin with soap and water. If any irritation persists seek medical attention. |
| Eyes: | No hazards which require first aid measures. If irritation occurs flush thoroughly with water. If irritation persists seek medical attention. |
| General Information: | No hazards which require special first aid measures. Provide general supportive measures and treat symptomatically. |

5. Firefighting Measures

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| Suitable extinguishing media: | All standard firefighting media. |
| Extinguishing media which must not be used for safety reasons: | None known. |
| Special exposure hazards: | Non-combustible. The product itself will not burn. The product becomes slippery when wet. |
| Special protective equipment for firefighters: | Standard protective clothing and firefighting equipment. |

6. Accidental Release Measures

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| Personal precautions: | No specific precautions are necessary. Avoid creating and breathing dust – see section 8. The product becomes slippery when wet. |
| Environmental precautions: | No special environmental precautions required. |
| Methods for cleaning up: | Avoid creating and breathing dust. |

7. Handling and Storage

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| Handling: | Do not breathe airborne dust and avoid creating dusty conditions. Material is slippery when wet. |
| Storage: | Store in dry storage area. Close container when not in use. No restrictions on storage with other products. |

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

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

| Constituents | Type | Value | Form |
|---|------|----------------------|---------------------|
| Inert or Nuisance Dusts (CAS SEQ250) | PEL | 5 mg/m ³ | Respirable Fraction |
| | | 15 mg/m ³ | Total Dust |

OSHA Table Z-3 Limits for Mineral Dusts (29 CFR 1910.1000)

| Constituents | Type | Values | Form |
|---|------|---------------------------------|---------------------|
| Inert or Nuisance Dusts (CAS SEQ250) | TWA | 5 mg/m ³ & 15 MPPCF | Respirable Fraction |
| | | 15 mg/m ³ & 50 MPPCF | Total Dust |

ACGIH Threshold Limit Values

| Constituents | Type | Values | Form |
|---|------|----------------------|---------------------|
| Inert or Nuisance Dusts (CAS SEQ250) | TWA | 3 mg/m ³ | Respirable Fraction |
| | | 10 mg/m ³ | Total Dust |

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| Biological Limit Values: | No biological exposure limits noted for the ingredients. |
| Appropriate Engineering Controls: | Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits. |
| Personal Protective Equipment: | If engineering controls and work practices cannot prevent excessive exposure, the selection of personal protective equipment should be determined by a qualified professional based on specific application of this product. |
| Respiratory Protection: | Ensure good ventilation. Use a NIOSH/MSHA approved respirator If there is risk of exposure to dust at levels exceeding the exposure limits. |
| Hand Protection: | Not required under normal conditions. |
| Eye Protection: | Goggles or safety glasses when there is danger of eye contact. |
| Skin Protection: | Standard work clothing. Environmental Exposure Controls: No special requirements. |
| General Hygiene: | Always observe good hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Use good industrial hygiene practices in handling this material. |

9. Physical and Chemical Properties

| | |
|---------------------|-----------------|
| Appearance: | Pellets |
| Odor: | None/slight |
| PH (0.5% solution): | 7 - 11 |
| Melting point | Not determined. |
| Boiling point: | Not applicable |
| Flash point: | Not applicable |

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|------------------------|-----------------------|
| Explosive properties: | Not explosive |
| Oxidizing properties: | Not determined |
| Vapor pressure: | Not determined |
| Vapor density: | Not applicable |
| Relative density: | 2.6 g/cm ³ |
| Solubility | |
| - water solubility: | < 0.9 mg/l |
| Partition coefficient: | |
| n-octanol/water: | Not applicable |
| Viscosity: | Not applicable |
| Evaporation rate: | Not applicable |

10. Stability and Reactivity

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|-----------------------------------|--|
| Stability: | Stable under normal conditions of use. |
| Conditions to avoid: | Moisture |
| Materials to avoid: | None known |
| Hazardous decomposition products: | None |

11. Toxicological Information

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|-----------------|---|
| Acute toxicity: | Not classified |
| Eye Contact: | Dust in the eyes may cause irritation. |
| Ingestion: | Not classified |
| Inhalation: | Inhalation of dust may irritate respiratory system. |
| Skin contact: | Dust may irritate skin. |

Toxicology Data

| Substance | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------|------------|------------------------------------|--------------------|------------------------------|
| Bentonite | 1302-78-9 | > 5000 mg (rat) > 2000 mg (rat) | No data No data | > 5.27 mg/L (rat) No data |

| | |
|----------------------------|--|
| Skin Corrosion: | Not classified. |
| Serous Eye Irritation: | Not classified. Dust, mild irritant to eyes. |
| Respiratory Sensitization: | Not classified |
| Skin sensitization: | Not classified |
| Germ Cell Mutagenicity | Not classified |

Carcinogenicity

In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. This product contains <10% total crystalline silica. The respirable crystalline silica as determined by the SWeRF method is <1% w/w.

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| Reproductive Toxicity: | Not classified. |
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| Aspiration Hazard: | Not an aspiration hazard. |
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16. Regulatory Information

US Federal Regulations: This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

CERCLA Hazardous Substances List (40 CFR 302.4) Not listed

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories:

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

SARA 302 Extremely Hazardous Substances

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. None present

SARA 311/312 Hazardous Chemical: No

SARA 313 – Specific Toxic Chemical Listings

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

None present. Not Regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed

17. Other Information

HMIS Rating

Health: 1

Flammability: 0

Reactivity: 0

NFPA Rating

Health: 1

Fire: 0

Reactivity: 0

Training Advice: Read the safety data sheet and technical data sheet prior to using the product.

Further Information: 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.

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. PDSCo, Inc. cannot anticipate under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.
