



FRANCIS DRILLING FLUIDS, LTD.

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Trade Name(s): Naturalgel	
Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9)	
Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0)	
Francis Drilling Fluids, LTD. P.O. Box 1694 Crowley, LA 70527-1694	Emergency/Telephone No.: 800-960-6610 337-783-8685 Hazardous Materials No.: 800-255-3924 Poison Control Center No.: 800-256-9822

II. HAZARDOUS INGREDIENTS

Ingredient	Cas No.	%	Hazard
Crystalline Silica (SiO ₂) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica in the form of quartz may be present in airborne bentonite dust. See health hazard section.

Note: The concentration level of free crystalline silica in airborne bentonite dust is variable depending upon origin of the bentonite ore, fineness of product, moisture content of product, local humidity and wind conditions at point of use, etc.

III. NFPA/HMIS HAZARD IDENTIFICATION SYSTEM

0=LEAST	1=SLIGHT	2=MODERATE	3=HIGH	4=EXTREME
Health: 0				
Fire: 0				
Reactivity: 0				

IV. PHYSICAL DATA

Boiling Point (°F): NA	Specific Gravity (H ₂ O=1): 2.45-2.55
Vapor Pressure (mm. Hg): NA	Melting Point: Approx. 1450 °C
Vapor Density (Air = 1): NA	Evaporation Rate: Butyl Acetate =1): NA
Solubility in Water: Insoluble, forms colloidal suspension	pH: 8-10 (5% aqueous suspension)
Density (at 20° C): 55 lbs./ cu.ft. as product	Odor: None
Appearance: Bluegray to green as moist solid, light tan to gray a dry powder	

V. FIRE AND EXPLOSION DATA

Flash Point: NA	Flammable Limits: LEL: NA UEL: NA
Special Fire Fighting Procedures: NA	

Unusual Fire and Explosion Hazards: None. Product will not support combustion.

Extinguishing Media: None for product. Any media can be used for the packaging. Product becomes slippery when wet.

VI. REACTIVITY

Stability: Stable

Hazardous Polymerization: None

Incompatibility: None

Hazardous Decomposition: None

VII. HEALTH HAZARD INFORMATION

Routes of Exposure and Effects :

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: Acute (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in dry cough. Chronic (long term) exposure to free silica containing airborne bentonite dust where levels are higher than TLV's may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion are symptomatic.

Ingestion: No adverse effects

Permissible Exposure Limits: (for air contaminants) Bentonite, as "Particulates not otherwise regulated" (formerly nuisance dust)

OSHA PEL (8hr. TWA): Total dust - 15mg/m³; Respirable dust - 5mg/m³; Crystalline Quartz (respirable) - 0.1mg/m³

ACGIH TLV: Total dust - ND; Respirable dust - ND; Crystalline Quartz (respirable) - 0.1mg/m³

Where cristobalite or tridymite are present use 1/2 of the PEL or TLV value for crystalline quartz.

Carcinogenicity: IARC, 1987, concludes that there is limited evidence suggesting the carcinogenicity in humans of inhaled crystalline silica (IARC Class 2A)

Listed By NTP: Not Listed

Listed By IARC: Not Listed

Listed By OSHA: Not Listed

Acute Oral LD50: ND

Acute Dermal LD50: ND

Aquatic Toxicology LC50: ND

Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

Ingestion: No special first-aid measures required.

Inhalation: Move to area free from dust. If symptoms of irritation persist contact physician. Inhalation may aggravate existing respiratory illness.

Additional Health Hazard Information:

VIII. HANDLING AND USE PRECAUTIONS

Steps to be Taken if Material is Released or Spilled: Avoid breathing dust; wear respirator approved for silica bearing dust. Vacuum up to avoid generating airborne dust. Avoid using water. Product slippery when wetted.

Waste Disposal Methods: Product should be disposed of in accordance with applicable local, state and federal regulations.

Handling and Storage Precautions: Use NIOSH/MSHA respirators approved for silica bearing dust when free silica containing airborne bentonite dust levels exceed PEL/TLV's. Clean up spills promptly to avoid making dust. Storage area floors may become slippery if wetted.

IX. INDUSTRIAL HYGIENE CONTROL MEASURES

Ventilation Requirements Mechanical, general room ventilation. Use local ventilation to maintain PEL's/TLV's.

Respirator: Use respirators approved by NIOSH/MSHA for silica bearing dust.

Eye Protection: Generally not necessary. Personal preference.

Gloves: Generally not necessary. Personal preference.

Other Protective Clothing or Equipment: None

X. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

XI. ENVIRONMENTAL/SAFETY REGULATIONS

DEPARTMENT OF TRANSPORTATION

Shipping Name: Common Ground Clay (NOIBN)

Hazard Class: Not Hazardous

Hazardous Substance: None

Cautionary Labeling: None Required

NA=Not Applicable; ND=Not Determined or No Data

Date Prepared: June 12, 1995

File Name: Naturalg

The data presented is true and correct to the best of our knowledge and belief; however, neither seller nor preparer make any warranties, express or implied, concerning the information presented. The user is cautioned to perform his own hazard evaluation and to rely upon his own determinations.