

# GROUT-WELL<sup>®</sup>

# GROUT-WELL DF<sup>®</sup>

*By WYO-BEN, INC.*

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## PRODUCT SUBMITTAL

- Product Information
- MSDS Sheets



GHP Systems, Inc.  
1000 32<sup>nd</sup> Avenue  
Brookings, SD 57006  
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(605) 697-7867 tel  
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# GROUT-WELL<sup>®</sup> AND GROUT-WELL<sup>®</sup> DF



GROUT-WELL<sup>®</sup> and GROUT-WELL<sup>®</sup> DF are one step bentonite grouting materials designed to achieve low permeability seals in water wells, monitor wells, geotechnical borings, and heat pump holes. They achieve a range of solids contents, 17% to 20% solids by weight. GROUT-WELL<sup>®</sup> DF's granular nature **reduces dusty conditions** during mixing operations.

Placement of the GROUT-WELL<sup>®</sup> products is best done using a positive displacement or progressive cavity pump. When pumping must be done with gear or diaphragm pumps, you may have to use additional make-up water to insure pumpability due to the limited pressure generated by these types of pumps.

When adding the grouts to make-up water, the slurry will resemble "pancake batter", a creamy consistency with lumps. This is the ideal time to pump the fluid since all the bentonite has not fully hydrated. Once in place, the particles continue to swell, sealing off cracks and crevices while gelling to form its caulk-like consistency.

Provided local regulations allow, it is always recommended that the tremie line be withdrawn as the grout is being pumped. This permits the grout to continue its "set" undisturbed, reduces pump pressure, and minimizes unnecessary migration into surrounding formations.

## MATERIAL SPECIFICATIONS:

Permeability:  $1 \times 10^{-8}$  cm/sec  
Slurry Density: 9.4 – 9.5 lbs/gal  
pH Range: 8.0 – 10.0  
Dry Bulk Density: 55 - 60 lbs/cu ft  
Thermal Conductivity: .42 BTU/hr-ft-degree F

	17.7% Solids	20.0% Solids
Grout-Well <sup>®</sup> DF	50 lbs	50 lbs
Water	28 gal	24 gal
Usable Slurry	31 gal	27 gal

TYPICAL E.P. TOXICITY ANALYSIS		
	Standard (ppm)	Set Grout (ppm)
Arsenic	5.0	<0.10
Barium	100.0	0.50
Cadmium	1.0	<0.05
Chromium	5.0	<0.10
Lead	5.0	<0.10
Mercury	0.2	<0.02
Selenium	1.0	<0.05
Silver	5.0	<0.10

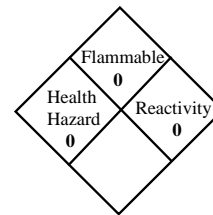
TYPICAL CHEMICAL ANALYSIS %			
SiO <sub>2</sub>	63.54	MgO	1.67
Al <sub>2</sub> O <sub>3</sub>	19.28	CaO <sub>3</sub>	0.38
Fe <sub>2</sub> O <sub>3</sub>	3.48	TiO <sub>2</sub>	0.22
K <sub>2</sub> O	0.10	Na <sub>2</sub> O	2.34
MnO	0.02	H <sub>2</sub> O	4.50
L.O.I. *	4.37		
*Loss on Ignition			

**GROUT-WELL<sup>®</sup> and GROUT-WELL<sup>®</sup> DF are packaged in 50 pound bags.**



# WYO-BEN, INC.

## MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD  
IDENTIFICATION SYSTEM

I. PRODUCT IDENTIFICATION			
Trade Name(s): <b>GROUT-WELL®</b>			
Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9) and other proprietary ingredients			
Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0) and other proprietary ingredients			
Manufacturer: <b>WYO-BEN, INC.</b> Address: P.O. Box 1979 Billings, Montana 59103		Telephone Numbers: Information: (406) 652-6351 EMERGENCY: (406) 652-6351	
II. HAZARDOUS INGREDIENTS			
Ingredient	CAS NO.	%	Hazard
Crystalline Silica (SiO <sub>2</sub> ) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica (SiO <sub>2</sub> ) in the form of quartz may be present in airborne bentonite dust. See Section VI for discussion of health hazard.
<p>Note 1: The specific chemical identity of this product is being withheld as a trade secret. In the event of a medical emergency it will be provided to a treating medical professional under the provisions of 29 CFR 1910.1200(i).</p> <p>Note 2: Although the typical quartz content of western bentonite is in the range of 2 to 6% most of the quartz particles are larger than the 10 μ respirable threshold size. The actual respirable quartz concentration in airborne bentonite dust will depend upon bentonite source, fineness of product, moisture content of product, local humidity and wind condition at point of use and other use specific factors.</p>			
III. PHYSICAL DATA			
Boiling Point (°F): NA		Specific Gravity (H <sub>2</sub> 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.			
Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.			
IV. 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.			
V. REACTIVITY			
Stability: Stable			
Hazardous Polymerization: None			
Incompatibility: None			
Hazardous Decomposition Products: None			
NA = Not Applicable ND = Not Determined			

## VI. 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 a dry cough. *Chronic* (long term) exposure to airborne bentonite dust containing respirable size ( $\square 10 \mu$ ) quartz particles, where respirable quartz particle levels are higher than TLV's, may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion may be symptomatic.

Ingestion: No adverse effects.

### Permissible Exposure Limits: (for air contaminants)

OSHA PEL  
(8hr. TWA)

ACGIH TLV

Bentonite as "Particulates not otherwise regulated"  
(formerly nuisance dust)

Total dust

15mg/m<sup>3</sup>

ND

Respirable dust

5mg/m<sup>3</sup>

ND

Crystalline Silica: Quartz (respirable)

10 mg/m<sup>3</sup>

0.025 mg/m<sup>3</sup>

% Silica + 2

Carcinogenicity: Bentonite is not listed by ACGIH, IARC, NTP or OSHA. IARC, 1997, concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica from occupational sources (IARC Class 1), that carcinogenicity was not detected in all industrial circumstances studied and that carcinogenicity may depend on characteristics of the crystalline silica or on external factors affecting its biological activity. NTP classifies respirable crystalline silica as "known to be a human carcinogen" (NTP 9<sup>th</sup> Report on Carcinogens – 2000). ACGIH classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Acute Oral LD<sub>50</sub>: ND

Acute Dermal LD<sub>50</sub>: ND

Aquatic Toxicology LC<sub>50</sub>: ND

### Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

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

## VII. 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.

## VIII. 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

## IX. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

## DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIAL INFORMATION

Shipping Name: NA (Not Regulated)

Hazard Class: NA

Hazardous Substance: NA

Caution Labeling: NA

Date Prepared: January 4, 2010

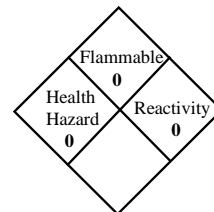
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*All information presented herein is believed to be accurate; however, it is the user's responsibility to determine in advance of need that the information is current and suitable for their circumstances. No warranty or guarantee, expressed or implied is made by WYO-BEN, INC. as to this information, or as to the safety, toxicity or effect of the use of this product.*



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Vapor Density (Air = 1): NA	Evaporation Rate (Butyl Acetate = 1): NA
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Density (at 20° C): 60 lbs./cu.ft. as product.	

Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.

### IV. 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.

### V. REACTIVITY

Stability: Stable

Hazardous Polymerization: None

Incompatibility: None

Hazardous Decomposition Products: None

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Other Protective Clothing or Equipment: None

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Shipping Name: NA (Not Regulated)

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Hazardous Substance: NA

Caution Labeling: NA

Date Prepared: January 4, 2010

Doc #: 4335-40

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