

MATERIAL SAFETY DATA SHEET

Trade Name: PARGEL 220

MSDS NO. 12034

Revision Date: 12/17/2001

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **PARGEL 220**

Synonyms: Bentonite

Chemical Family: Naturally occurring mineral

Product Use: Oil well drilling fluid additive.

UN/NA PIN No: Not Regulated

WHMIS Class: D2A

HMIS Rating

Health: *1

Flammability: 1

Reactivity: 0

PPE: J

Emergency Telephone (24 hr.): 281-561-1600

Supplied by a Business Unit of:

M-I L.L.C.

5950 North Course Drive

Houston, TX 77072

Phone: (281) 561-1509

Fax: (281) 561-7240

Contact Person: Sam Hoskin - Manager, Occupational Health

Revision Date: 12/17/2001

Revision Number: 1

MSDS Status: Approved

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient/CAS	Wt. %
Bentonite 1302-78-9	70 - 95
Silica, crystalline, quartz 14808-60-7	2 - 15
Silica, crystalline, Cristobalite 14464-46-1	2 - 12
Silica, crystalline, Tridymite 15468-32-3	1 - 5
Gypsum 13397-24-5	0 - 1

Ingredient Comments: No comments.

3. HAZARDS IDENTIFICATION

Emergency Overview:

CAUTION! MAY CAUSE EYE, SKIN, AND RESIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. This product is a/an tan to gray powder. Slippery when wet. No significant immediate hazards for emergency response personnel are known.

Potential Health Effects:

Acute Effects

Trade Name: PARGEL 220 MSDS NO. 12034
Revision Date: 12/17/2001

Eye Contact: May be irritating to the eyes.
Inhalation: May be irritating to the respiratory tract if inhaled.
Ingestion: May cause gastric distress, nausea and vomiting if ingested.
Skin Contact: May be irritating to the skin.
Chronic Effects

Sensitization: Not determined.
Carcinogenicity:

Cancer Comments: ATTENTION! CANCER HAZARD. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

Silica, crystalline, quartz 2 - 15 14808-60-7

IARC: Listed
OSHA: Listed
NTP: Listed

Silica, crystalline, Cristobalite 2 - 12 14464-46-1

IARC: Listed
OSHA: Listed
NTP: Listed

Silica, crystalline, Tridymite 1 - 5 15468-32-3

IARC: Listed
OSHA: Listed
NTP: Listed
Target Organ Effects: Respiratory System. Lungs. Skin. Eyes.
Signs and Symptoms: Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

Medical Conditions Aggravated By Exposure: Respiratory conditions.

Environmental Effects and Hazards:
Environmental effects have not been determined.

4. FIRST AID MEASURES

Eye Contact: Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Ingestion: Drink a couple of glasses of water or milk. Do not give victim anything to drink if he is unconscious. Get medical attention.

Trade Name: PARGEL 220 MSDS NO. 12034

Revision Date: 12/17/2001

Inhalation: Move person to fresh air. Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

Skin Contact: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation persists.

General Notes: Persons seeking medical attention should carry a copy of this MSDS with them.

Notes To Physician: None known.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point: °F Not Determined °C Not Determined

Flash Point Method: Not Determined

Flammable Limits in Air - Lower (%): Not Determined

Flammable Limits in Air - Upper (%): Not Determined

Autoignition Temperature: °F Not Determined °C Not Determined

Flammability Class: Not determined.

Other Flammable Properties: Not determined.

Extinguishing Media: This material is not combustible. Use extinguishing media appropriate for surrounding fire.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: No specific fire fighting procedure given.

Hazardous Combustion Products: None relevant.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment identified in Section 8.

Spill Procedures: Avoid the generation of dust.
Sweep, vacuum, or shovel and place into closable container for disposal. Cover and move the containers. Flush the area with water. Repackage or replace if possible.

Environmental Precautions: Do not allow to enter sewer or surface and subsurface waters.

7. HANDLING AND STORAGE

Handling: Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

Storage: Store at room temperature in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Trade Name: PARGEL 220

MSDS NO. 12034

Revision Date: 12/17/2001

Ingredient/CAS	Wt. %	ACGIH TLV TWA	ACGIH TLV STEL	ACGIH TLV Ceiling:	ACGIH Skin	OSHA PEL TWA	OSHA PELs Ceiling:	OSHA PELs Skin	Notes
Bentonite 1302-78-9	70 - 95	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	(1)
Silica, crystalline, quartz 14808-60-7	2 - 15	0.05 mg/m ³	Not Listed	Not Listed	Not Listed	see Table Z-3	Not Listed	Not Listed	(R)
Silica, crystalline, Cristobalite 14464-46-1	2 - 12	0.05 mg/m ³	Not Listed	Not Listed	Not Listed	see Table Z-3	Not Listed	Not Listed	(R)
Silica, crystalline, Tridymite 15468-32-3	1 - 5	0.05 mg/m ³	Not Listed	Not Listed	Not Listed	see Table Z-3	Not Listed	Not Listed	(R)
Gypsum 13397-24-5	0 - 1	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	None

Notes:

(R) Respirable fraction (ACGIH); (1) Control as Particulates Not Otherwise Regulated (PNOR); PEL: 5 mg/m³ resp; TLV: 3 mg/3m resp; Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m³ / (%SiO₂+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite.

Engineering Controls:

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

Personal Protection Equipment**Eye/Face Protection:**

Wear dust resistant safety goggles where there is a danger of eye contact.

Skin Protection:

Wear appropriate clothing to prevent repeat or prolonged skin contact. Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of: Impermeable material such as, Neoprene, nitrile, polyethylene or PVC.

Respiratory Protection:

Use at least a NIOSH-approved N95 half-mask disposable or reusable particulate respirator. In work environments containing oil mist/aerosol, use at least NIOSH-approved P95 half-mask disposable or reusable particulate respirator. For exposure exceeding 10 x PEL use a NIOSH-approved N100 Particulate Respirator.

General Hygiene Considerations:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Powder Dust

Color:

tan to grey

Odor:

Odorless or no characteristic odor.

Physical State:

Powder, dust

pH Value, Conc. Sol.:

Not Determined

pH Value Diluted Sol.:

Not determined.

Vapor Pressure:

N/A

Vapor Density (Air=1):

N/A

Trade Name: PARGEL 220

MSDS NO. 12034

Revision Date: 12/17/2001

Boiling Point (°F): Not determined.
Melting/Freezing Point: Not determined.
Solubility in Water Description: Not Determined
Solubility: Insoluble in water.
Density/Specific Gravity: 2.3-2.6
Bulk Density at 20°C: 67 lb/ft³; 1068 kg/m³
Evaporation Rate: Not Determined
Odor Threshold Lower: NA
Odor Threshold Upper: Unknown

10. STABILITY AND REACTIVITY

Chemical Stability: Normally Stable.
Conditions to Avoid: N/A
Materials to Avoid: None known
Hazardous Decomposition Products: No specific hazardous decomposition products noted.
Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

Toxicological Data

Ingredient/CAS	Wt. %	Route	Species	Dose	Duration	Effect	Source
Bentonite 1302-78-9	70 - 95	N/D	N/D				N/D
Silica, crystalline, quartz 14808-60-7	2 - 15	N/D	N/D				N/D
Silica, crystalline, Cristobalite 14464-46-1	2 - 12	N/D	N/D				N/D
Silica, crystalline, Tridymite 15468-32-3	1 - 5	N/D	N/D				N/D
Gypsum 13397-24-5	0 - 1	N/D	N/D				N/D

Toxicological Information: No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

Ecotoxicological Data

Ingredient/CAS	Wt. %	Species	Concentration	Duration	Source
Bentonite 1302-78-9	70 - 95	N/D		N/D	N/D
Silica, crystalline, quartz 14808-60-7	2 - 15	N/D		N/D	N/D
Silica, crystalline, Cristobalite 14464-46-1	2 - 12	N/D		N/D	N/D
Silica, crystalline, Tridymite 15468-32-3	1 - 5	N/D		N/D	N/D

Trade Name: PARGEL 220

MSDS NO. 12034

Revision Date: 12/17/2001

Gypsum 13397-24-5	0 - 1	N/D		N/D	N/D
----------------------	-------	-----	--	-----	-----

Chemical Fate Data

Biodegradation: Not determined.

Bioaccumulation: Not determined

Octanol/Water Partition Coefficient: None Known

Ecological Information: No ecological information is available for this product.

13. DISPOSAL CONSIDERATIONS**Waste Classification:** This product does not meet the criteria of a hazardous waste if discarded in its purchased form.**Waste Management:** Under RCRA, it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty container retain residues. All labeled precautions must be observed.**Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.**14. TRANSPORT INFORMATION****U.S. DOT**

Proper Shipping Name: Not Regulated
Hazard Class: None
Subsidiary Harzard: None
UN/NA Number: Not Regulated
DOT Packing Group: None
Packaging Authorizations: None
Product RQ: N/A
Emergency Response Guide No.: Not determined.

TDG (Canada):

Proper Shipping Name: Not Regulated
Hazard Class: Not regulated.
Subsidiary Hazard: None
UN/NA PIN No: Not Regulated
Packing Group: None

IMDG:

Proper Shipping Name: Not Regulated
Hazard Class: Not regulated.
Subsidiary Hazard: None
UN No.: Not Regulated
Packing Group: None
EMS No.: None
Marine Pollutant: None

Trade Name: PARGEL 220 MSDS NO. 12034
Revision Date: 12/17/2001

ICAO/IATA:

Proper Shipping Name: Not Regulated
Hazard Class: Not regulated.
Subsidiary Hazard: None
UN No.: Not Regulated
Packing Group: None

15. REGULATORY INFORMATION

US Federal Regulations

SARA 311/312:

SARA 311/312 Hazard Categories: Immediate (acute) health hazard;

Bentonite 70 - 95 1302-78-9

SARA 313	Not Listed
CERCLA	Not Listed
SARA 302 / TPQs	Not Listed

Silica, crystalline, quartz 2 - 15 14808-60-7

SARA 313	Not Listed
CERCLA	Not Listed
SARA 302 / TPQs	Not Listed

Silica, crystalline, Cristobalite 2 - 12 14464-46-1

SARA 313	Not Listed
CERCLA	Not Listed
SARA 302 / TPQs	Not Listed

Silica, crystalline, Tridymite 1 - 5 15468-32-3

SARA 313	Not Listed
CERCLA	Not Listed
SARA 302 / TPQs	Not Listed

Gypsum 0 - 1 13397-24-5

SARA 313	Not Listed
CERCLA	Not Listed
SARA 302 / TPQs	Not Listed

State Regulations

State Comments:

Proposition 65: This product contains chemical(s) considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, which warnings are now required and are marked as

Trade Name: PARGEL 220 MSDS NO. 12034

Revision Date: 12/17/2001

"listed" below:

Bentonite 70 - 95 1302-78-9

California Prop. 65 Cancer list	Not Listed
California Prop. 65 Developmental Toxicity	Not Listed
California Prop. 65 Reproductive Female	Not Listed
California Prop. 65 Reproductive Male	Not Listed

Silica, crystalline, quartz 2 - 15 14808-60-7

California Prop. 65 Cancer list	Listed
California Prop. 65 Developmental Toxicity	Not Listed
California Prop. 65 Reproductive Female	Not Listed
California Prop. 65 Reproductive Male	Not Listed

Silica, crystalline, Cristobalite 2 - 12 14464-46-1

California Prop. 65 Cancer list	Listed
California Prop. 65 Developmental Toxicity	Not Listed
California Prop. 65 Reproductive Female	Not Listed
California Prop. 65 Reproductive Male	Not Listed

Silica, crystalline, Tridymite 1 - 5 15468-32-3

California Prop. 65 Cancer list	Listed
California Prop. 65 Developmental Toxicity	Not Listed
California Prop. 65 Reproductive Female	Not Listed
California Prop. 65 Reproductive Male	Not Listed

Gypsum 0 - 1 13397-24-5

California Prop. 65 Cancer list	Not Listed
California Prop. 65 Developmental Toxicity	Not Listed
California Prop. 65 Reproductive Female	Not Listed
California Prop. 65 Reproductive Male	Not Listed

International Inventories

TSCA - Sect. 8(b) Inventory	This product complies with TSCA.
Canada - Domestic Substances Inventory	This product complies with Canadian DSL.
Canada - Non-Domestic Substances Inventory	This product does not comply with Canadian NDSL.

Canadian Regulations

Controlled Products Regulations
Statement:

This Material Safety Data Sheet has been prepared in compliance with the
Controlled Product Regulations.

WHMIS Class: D2A

16. OTHER INFORMATION

Trade Name: PARGEL 220 **MSDS NO.** 12034

Revision Date: 12/17/2001

Notes:

N/D = Not Determined; N/A = Not Applicable

Information Sources:

OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Sections 1910.1000, Air Contaminates. ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (Latest edition). Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed), VNR, New York, New York, (1997). IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Silica, Some Silicates, Coal Dust, and para-Aramid Fibrils, Vol. 68, World Health Organization, Lyon, France, 1997.

The following has been revised since the last issue of this MSDS:

Nothing has been revised.

Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.