



State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
**DOE OVERSIGHT BUREAU**  
 P.O. Box 1663, MS/J-993  
 Los Alamos, New Mexico 87545



GARY JOHNSON  
 GOVERNOR

MARK E. WEIDLER  
 SECRETARY

Office  
 TR-0  
 Guaje Canyon

April 17, 1998

Mr. Mat Johansen, AIP POC  
 U.S. Department of Energy  
 Los Alamos Area Office  
 528 35th Street, MS A316  
 Los Alamos, NM 87544

**RE: Mud spill at the Guaje Replacement Well Field**

Dear Mr. Johansen:

Enclosed please find an informal summary of a mud spill which occurred at the Guaje Replacement Well Field between April 5 and 9, 1998. While there have been a total of three spills at the Guaje Well Field this month, this particular release is of major concern. The spills which occurred at the Guaje Well Fields on April 3 and 4 of this year were reported to ESH-18 and handled in a timely manner. However, this particular spill was not reported to ESH-18 in either a timely or accurate manner.

Personnel from Beylik are responsible for contacting ESH-18 in the event of a spill due to their operations and relaying all pertinent information regarding that spill to ESH-18. After speaking with Beylik personnel during a recent site visit, DOE OB personnel were frustrated by the lack of information provided for this particular spill. When asked for details regarding the circumstances of this particular spill, Beylik personnel repeatedly answered with the phrase "I don't know." This is troubling and conveys the impression that either Beylik does not have positive control of the operations at Guaje Canyon or Beylik personnel may not be conveying an accurate account of the events associated with this discharge. Photographs of the spill were taken by DOE OB personnel and copies have been sent to the SWQB and DOE Los Alamos Area Office. Additional copies of these photographs are being produced and will be forwarded to ESH-18, ESH-7, and the US Forest Service. The enclosed summary offered does not represent the regulatory position of NMED.

Thank you for your time and consideration. If you have any questions regarding this matter, please do not hesitate to call Dennis Romero of our staff at 672-0459.

Sincerely,

*Stephen Yanicak*

Steve Yanicak, LANL POC  
 Department of Energy Oversight Bureau

SY:dr

RECEIVED

APR 21 1998

DOE OVERSIGHT BUREAU

LANL/Don-HSWA/MPDF



4092

**Enclosures:**     **Summary of spill**  
                  **Rough sketch of affected area**  
                  **Material Safety Data Sheets (MSDS) of material spilled**

**cc:**

**Bonnie Koch, DOE LAAO, MS A316**  
**Stephen Fong, DOE LAAO, MS A316**  
**Steve Rae, LANL, Group Leader, ESH-18, MS K497**  
**Michael Saladen, ESH-18, MS K497**  
**Rubel Martinez, ESH-7, MS K999**  
**Barbara Hoditshek, NMED, SWQB**  
**John Parker, NMED, DOE OB**  
**Ralph Ford-Schmid, NMED, DOE OB**  
**Robert Remillard, FS/DOE Liaison, USDA Forest Service**  
**File, NMED DOE OB**

c:\...\guaje.spill.wpd (ltr. 4-17-98)

DOE OB  
Summary of Spill at Guaje Replacement Wells Project, Water Treatment Site

Summary:

The following people met at 9:30 AM on April 15, 1998 to discuss the mud spill which occurred at the Guaje Replacement Wells Project, Water Treatment Site:

Barbara Hoditschek	NMED, Surface Water Quality Bureau
Stephen Fong	Department of Energy, Los Alamos Area Office
Charles Richardson	LANL, FSS-6
Harvey Decker	LANL, ESH-18
William Turney	LANL, ESH-18
Rubel Remillard	USDA Forest Service
Dennis Romero	NMED, Department of Energy Oversight Bureau
Dick Carr	LANL, FSS-6
Patricia Vardara-Charles	LANL, ESH-7
Robert Martinez	LANL, ESH-7

After a site visit by the personnel listed above and a lengthy discussion, the following information was uncovered

Date of Spill:	Between April 5 and 9, 1998
Time of Spill:	Unknown
Date Discovered:	April 9, 1998
Time Discovered:	1300
Location of Spill:	Guaje Canyon Watercourse, approximately 200 yds NE of GR 1 (see Fig. 1).
Material Released:	Appeared to be a mixture of bentonite, silica, and a flocculation agent, along with treated water which did meet discharge standards.
Volume Released:	Unknown, still under investigation.
Extent of Spill:	Approximately 150 yards of the watercourse appears to have been affected (Fig. 1). LANL is currently devising a sampling plan to assess the total extent of the spill.
Cause of Spill:	Most likely cause of spill was determined to be either a misalignment of the diatomaceous earth filter system or a "blow-out" of the filter.

Harvey Decker, of ESH-18, is in the process of compiling and distributing a spill notification report for this incident and will provide further details as they become available.

After discussing the above issues, the group decided on the following course of action

Corrective Actions: The actions to be taken were outlined as

1. Determine the extent of the spill. This will be accomplished via a sampling plan to be proposed by FSS-6 and ESH-18. The sampling plan will be submitted to NMED/SWQB for approval. The US Forest Service will be given the opportunity to review the sampling plan and provide any input it deems pertinent. The spill is considered to be an instance of dumping debris in a watercourse. The materials that samples will be analyzed for will include bentonite, diatomaceous earth (silica), and a combination of polymers used as flocculation agents (three MSDS's for these polymers are attached).
2. Determine the best corrective action. A proposal outlining the methods to be used to clean up the affected area will be submitted by ESH-18 and FSS-6. This proposal will be submitted to NMED/SWQB for approval. Again, The US Forest Service will be given the opportunity to review this proposal and provide any input it deems pertinent. A preliminary plan proposed by DOE and LANL involved removing affected cobbles less than 4" from the streambed and scrubbing cobbles greater than 4" in size in-situ. The smaller cobbles will be stored away from the affected area awaiting disposal or further clean-up, while the larger rocks will stay in the streambed. Following this initial clean-up, sediment traps will be constructed downstream from the affected area. These sediment traps will capture any of the finer grains of the bentonite/silica mixture that could not be initially removed. Discharge of the treated water will resume after the sediment traps are in place, in order to flush the finer sediments out of the streambed. The discharge of the treated water will take place at reduced flow rates in order to allow the finer bentonite particles to settle out at the sediment traps. Mr. Remillard was very concerned about the effects of a clean-up on the stream and stated that any clean-up should disturb the streambed and ecosystem as little as possible. Both LANL and DOE personnel assured Mr. Remillard that the Forest Service should be consulted on every phase of the clean-up and, as the owner of the affected area, be given the opportunity to contribute to the clean-up effort and final closeout.
3. Verification of clean-up. A proposal outlining the methods to be used to verify the clean-up of the affected area will be submitted by ESH-18 and FSS-6. This proposal will be submitted to NMED/SWQB for approval. Again, The US Forest Service will be given the opportunity to review this proposal and provide any input it deems pertinent. Barbara Hoditshek indicated that personnel from the DOE Oversight would be used at each phase of the corrective action plan in order to provide the SWQB with recommendations for approval of the clean-up.

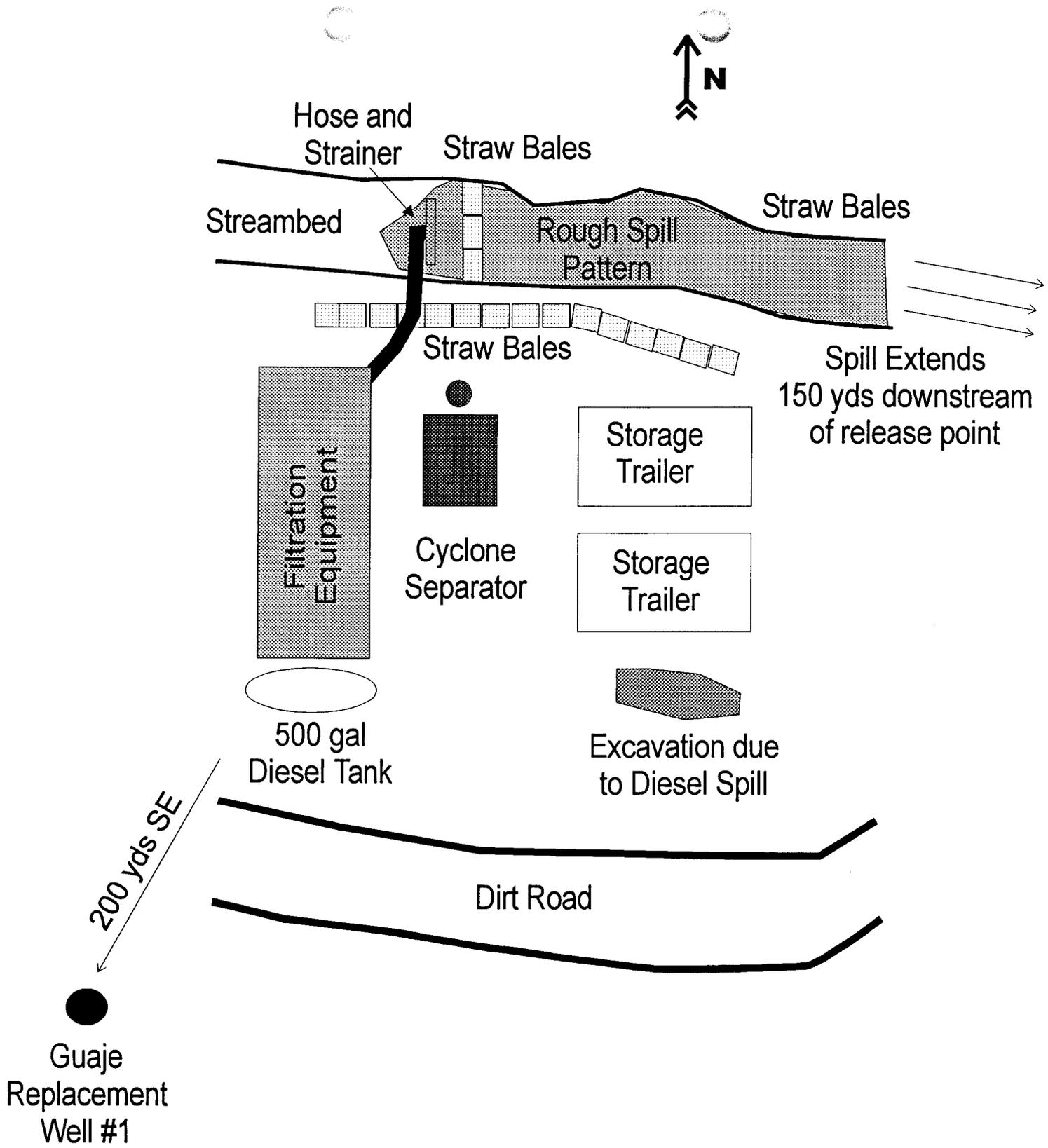


Figure 1 - Rough sketch of Mud Spill at Guaje Replacement Wells Project, Water Treatment Site (not drawn to scale)

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March 31, 1993

**Material Safety Data Sheet****DRISPAC® PLUS POLYMER**

DRILLING SPECIALTIES COMPANY  
Bartlesville, Oklahoma 74004

**PHONE NUMBERS**

Emergency: (918) 661-8118  
General MSDS Information: (918) 661-8327  
For Additional MSDS: (918) 661-5952

**A. Product Identification**

Synonyms: Drilling Additive  
Chemical Name: Proprietary  
Chemical Family: Cellulose Ether  
Chemical Formula: Proprietary  
CAS Reg. No.: Proprietary  
Product No.: Not Established

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions.

**B. Components**

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
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This product does not meet the definition of a hazardous chemical given in 29 CFR Part 1910.1200 (OSHA). Information on this form is furnished as a customer service.

NA - Not Applicable NE - Not Established

Drispac® Plus Polymer (US240200)

**Acute Effects of Overexposure:**

**Eye:** Dust may produce mechanical irritation.

**Skin:** May produce slight irritation with prolonged contact with moistened product.

**Inhalation:** Non-irritating to mucous membranes, however, breathing high concentrations of the dust may cause mechanical irritation of the nose, throat, and upper respiratory tract.

**Ingestion:** Passes through relatively inert. May cause some gastrointestinal upset. Oral LD50 > 25 g/Kg (rats).

**Subchronic and Chronic Effects of Overexposure:**

No adverse effects have been noted in chronic feeding studies using laboratory animals and humans. Sarcomas were exhibited at injection sites of animals receiving repeated massive subcutaneous injections of aqueous solutions of the material. The effects may have been the result of local trauma.

**Other Health Effects:**

Long term exposure to high dust concentrations may cause non-debilitating lung changes.

**Health Hazard Categories:**

	Animal	Human		Animal	Human
Known Carcinogen	—	—	Toxic	—	—
Suspect Carcinogen	—	—	Corrosive	—	—
Mutagen	—	—	Irritant	—	—
Teratogen	—	—	Target Organ Toxin	—	—
Allergic Sensitizer	—	—	Specify - No known applicable information	—	—
Highly Toxic	—	—			

**First Aid and Emergency Procedures:**

**Eye:** Flush eyes with running water. If irritation or adverse symptoms develop, seek medical attention.

**Skin:** Wash skin with soap and water. If irritation or adverse symptoms develop, seek medical attention.

**Inhalation:** Remove from exposure. If illness or adverse symptoms develop, seek medical attention.

**Ingestion:** If illness or adverse symptoms develop, seek medical attention.



### C. Personal Protection Information

**Ventilation:** Use adequate ventilation to control concentration below recommended exposure limits.

**Respiratory Protection:** Not generally required unless needed to prevent respiratory irritation. For concentrations exceeding the recommended exposure limit, use NIOSH/MSHA approved air purifying respirator.

**Eye Protection:** Use safety glasses with side shields.

**Skin Protection:** Avoid unnecessary skin contamination with material.

**NOTE:** Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

### D. Handling and Storage Precautions

Avoid contact with eyes, skin or clothing. Avoid breathing vapors, mist, fume or dust. Wear equipment and/or garments described in Section C if exposure conditions warrant. Launder contaminated clothing before reuse. Wash thoroughly after handling. Use with adequate ventilation.

Store in a well-ventilated area. Store in a closed container.

### E. Reactivity Data

**Stability:** Stable

**Conditions to Avoid:** Not Established

**Incompatibility (Materials to Avoid):** Not Established

**Hazardous Polymerization:** Will Not Occur

**Conditions to Avoid:** Not Established

**Hazardous Decomposition Products:** Not Established

### F. Health Hazard Data

#### Recommended Exposure Limits:

	OSHA PEL	ACGIH TLV
Control as a nuisance dust:		
Respirable	5 mg/m <sup>3</sup>	NE
Total Dust	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>



## G. Physical Data.

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Appearance: Light Colored Powder  
Odor: Odorless  
Boiling Point: Not Applicable  
Vapor Pressure: Not Applicable  
Vapor Density (Air = 1): Not Applicable  
Solubility in Water: Complete  
Specific Gravity (H<sub>2</sub>O = 1): 1.6  
Percent Volatile by Volume: Negligible  
Evaporation Rate ( = 1): Not Applicable  
Viscosity: Not Applicable

## H. Fire and Explosion Data

Flash Point (Method Used): Not Applicable  
Flammable Limits (% by Volume in Air):  
LEL - Not Established  
UEL - Not Established

Fire Extinguishing Media: Dry chemical, foam or carbon dioxide (CO<sub>2</sub>), water spray or fog

Special Fire Fighting Procedures: Evacuate area of all unnecessary personnel. Use NIOSH/MSHA approved self-contained breathing apparatus and other protective equipment described in Section C if conditions warrant.

Fire and Explosion Hazards: If in a finely divided and suspended state, treat as a flammable dust. Becomes slippery when wet.

## I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:  
Sweep up spill and place in disposal container. If wet, material becomes very slippery. Use protective equipment and/or garments described in Section C if exposure conditions warrant.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):  
Manage in a permitted waste management facility.

## J. DOT Transportation

Shipping Name: Not Applicable  
Hazard Class: Not Applicable  
ID Number: Not Applicable  
Marking: Not Applicable  
Label: Not Applicable  
Placard: Not Applicable  
Hazardous Substance/RQ: Not Applicable  
Shipping Description: Not Applicable  
Packaging References: Not Applicable

### K. RCRA Classification - Unadulterated Product as a Waste

Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

### L. Protection Required for Work on Contaminated Equipment

Contact immediate supervisor for specific instruction before work is initiated. Wear protective equipment and/or garments described in Section C if exposure conditions warrant.

### M. Hazard Classification

— This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Combustible Liquid | <input type="checkbox"/> Flammable Aerosol         | <input type="checkbox"/> Oxidizer       |
| <input type="checkbox"/> Compressed Gas     | <input type="checkbox"/> Explosive                 | <input type="checkbox"/> Pyrophoric     |
| <input type="checkbox"/> Flammable Gas      | <input type="checkbox"/> Health Hazard (Section F) | <input type="checkbox"/> Unstable       |
| <input type="checkbox"/> Flammable Liquid   | <input type="checkbox"/> Organic Peroxide          | <input type="checkbox"/> Water Reactive |
| <input type="checkbox"/> Flammable Solid    |  |   |

Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

### N. Additional Comments

SARA 313

As of the preparation date, this product did not contain a chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### ENVIRONMENTAL TOXICITY

The 96-hour LC50 for Drispac® Plus Polymer at 2.0 ppb concentration in a generic mud for Mysid Shrimp was >1,000,000 ppm.

Phillips Petroleum Company (references to Phillips Petroleum Company or Phillips include its divisions, affiliates and subsidiaries) believes that the information contained herein (including data and statements) is accurate as of the date hereof. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE AS CONCERNS THE INFORMATION HEREIN PROVIDED. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and information referred to herein are beyond the control of Phillips, Phillips expressly disclaims any and all liability as to any results obtained or arising from any use of the product or such information. The statement made herein shall be construed as a restriction or recommendation for the use of any product in a manner that might infringe existing patents.

*Handwritten mark*

**Material Safety Data Sheet**

May be used to comply with  
 OSHA's Communication Standard,  
 29 CFR 1910.1200. Standard must be  
 consulted for specific requirements.

**U.S. Department of Labor**

Occupational Safety and Health Administration  
 (Non-Mandatory Form)  
 Form Approved  
 OMB No. 1218-0072



**IDENTITY (As Used on Label and List)** Praestol 655K *Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.*

**Section I**

<b>Manufacturer's Name</b> STOCKHAUSEN, INC.	<b>Emergency Telephone Number</b> 1-800-242-2271
<b>Address (Number, Street, City, State, and ZIP Code)</b> 2408 Doyle St. Greensboro, N.C. 27406	<b>Telephone Number for Information</b> (910)333-3500
<b>Date Prepared</b> July 27, 1992	NA = Not Applicable NE = Not Established
<b>Signature of Preparer (optional)</b> <i>Walter R. Pitt</i>	

**Section II - Hazardous Ingredients/Identity Information**

Serial No. 0384

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Copolymer of acrylate salt and acrylamide - Coagulant CAS No. 69418-26-4	N/E	N/E	irritant (eye)	major
Adipic acid CAS No. 00124-04-9	N/E	N/E	irritant (eye)	minor

**SARA Section 313 Reportable Toxic Chemicals - none.**

**Section III - Physical/Chemical Characteristics**

<b>Boiling Point</b> Solid material	N/A	<b>Specific Gravity (H<sub>2</sub>O = 1)</b>	<b>Bulk Density</b>	600-700 gm/L.
<b>Vapor Pressure (mm Hg.)</b> Less than	30	<b>Melting Point</b>	<b>Greater than</b>	200°C
<b>Vapor Density (AIR = 1)</b> Nil	N/E	<b>Evaporation Rate (Butyl Acetate = 1)</b>	<b>Less than</b>	1

**Solubility in Water**  
Miscible (soluble to approximately 2% by wt.) - forms very viscous solutions.

**Appearance and Odor**  
White granulated solid: faint amine odor.

**Section IV - Fire and Explosion Hazard Data**

<b>Flash Point (Method Used)</b> Greater than 100°C (PMCC)	<b>Flammable Limits</b>	<b>LEL</b> N/E	<b>UEL</b> N/E
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**Extinguishing Media**  
Any available extinguishant media.

**Special Fire Fighting Procedures**  
None: Spilled product creates slippery conditions in contact with water.

**Unusual Fire and Explosion Hazards**  
None

**Section V — Reactivity Data**

Stability	Unstable		Conditions to Avoid None Known
	Stable	X	

Incompatibility (Materials to Avoid) None Known

Hazardous Decomposition or Byproducts  
Thermal decomposition: Oxides of Carbon (CO, CO<sub>2</sub>), and Nitrogen (NO, NO<sub>2</sub>).

Hazardous Polymerization	May Occur		Conditions to Avoid None Known
	Will Not Occur		

**Section VI — Health Hazard Data**

Route(s) of Entry:	Inhalation?	Yes	Sign?	No	Ingestion?	Yes
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Health Hazards (Acute and Chronic)

Contact with the eyes and/or prolonged/repeated skin contact may cause irritation.

Inhaled particles may cause respiratory irritation.

Carcinogenicity:	NTP?	No	IARC Monographs?	No	OSHA Regulated?	No
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Signs and Symptoms of Exposure  
Reddening, swelling of affected area with possible itching, burning, or other discomfort.

Medical Conditions Generally Aggravated by Exposure  
Existing cuts, rashes, allergies, or other sensitive areas.

Emergency and First Aid Procedures  
Eyes and Skin: Flush thoroughly with water, Inhalation: Move to fresh air.  
Ingestion: If ill effects occur, seek medical attention as with any prolonged discomfort.

**Section VII — Precautions for Safe Handling and Use**

Steps to Be Taken in Case Material is Released or Spilled  
Contain and collect dry granulate material using scoop, shovel, or other suitable device.

Avoid use of water, as slippery conditions will be created. Flush residuals thoroughly with water to normal wastewater drain.

Waste Disposal Method  
Dispose of in accordance with local, state, and federal regulations, Incineration or landfill as non-hazardous solid waste with approval of authorities.

Precautions to Be Taken in Handling and Storing  
Handle as an irritant. Do not get into eyes. Avoid prolonged/repeated skin contact.  
Avoid inhalation of dust. Do not ingest.

Other Precautions  
Spilled product creates slippery conditions.

**Section VIII — Control Measures**

Respiratory Protection (Specify Type)  
For dusty conditions (nuisance dust mask). Insure compliance with Section II.

Ventilation	Local Exhaust Recommended for dusty conditions	Special None required.
	Mechanical (General) Recommended	Other None required.

Protective Gloves  
Impervious neoprene or rubber.

Eye Protection  
Safety glasses or goggles.

Other Protective Clothing or Equipment  
Shoes, apron, or other as needed to prevent prolonged/repeated skin contact.

Work Hygienic Practices  
Wash thoroughly after handling.

*2/25/95*

INTERCHEM SERVICES, INC.

## MATERIAL SAFETY DATA SHEET

### ICS-6595 DRY FLOCCULANT POLYMER

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#### I. Supplier Information

Supplier: INTERCHEM SERVICES, INC.  
Address: One Park Plaza, Suite 1250  
Irvine, CA 92714-8509

Telephone: 714-250-7830  
Date: January 25, 1995

HMIS: Health 1 Fire 0 Reactivity 0

NFPA: Health 1 Fire 0 Reactivity 0

#### II. Identification and Physical Data

- Product Name: ICS-6595
- Product Class: acrylic copolymer powder
- Dot Hazard Class: not regulated
- ID Number: none
- Form: granular solid
- Odor: none
- Color: white
- Solubility in Water: 10% (forms gel)
- Evaporation rate: not determined
- Bulk Density: 0.8
- Shelf Life: 2 years

#### III. Hazardous Ingredients

- Not considered hazardous under OSHA Federal Regulation 29 CFR 1910.1200

#### IV. Fire and Explosion Hazard Data

- Suitable Extinguishing Media: water, water spray, foam, carbon dioxide, dry powder
- Special Firefighting Precautions: Aqueous solutions or powders that become wet render surfaces very slippery.
- Special Protective Equipment for Firefighters: No special protective equipment required.

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To the best of our knowledge, the information contained herein is accurate. However, no liability whatsoever is assumed for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MSDS: ICS-6595

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**V. Reactivity Data**

Stable yes

Hazardous Polymerization no

- Conditions to Avoid: No unusual activity
- Materials to Avoid: Strong oxidizing agents
- Hazardous Decomposition Products: Normally stable. Combustion products may include oxides of carbon and nitrogen.

**VI. Health Hazard Data**

**Effects of Overexposure**

- Ingestion: LD50/oral/rat = 5000mg/kg
- Inhalation: The product is not expected to be toxic by inhalation.
- Skin Absorption: The results of testing on rabbits showed this product to be non irritating to the skin.
- Skin Contact: Contains materials that may cause moderate skin irritation. Prolonged exposure to liquid or dried product may cause drying or defatting and cracking of the skin.
- Eye Contact: Testing conducted according to the Draize technique showed this material produces no corneal or iridial effects and only slight transitory conjunctival effects similar to those of all granular materials produce.
- Chronic Effects: A two year feeding study on rats did not reveal adverse health effects.

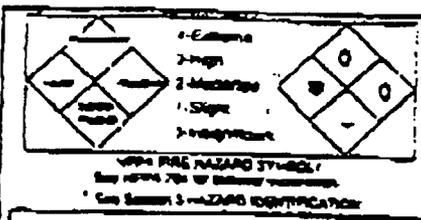
**Emergency and First Aid Procedures**

- Eye Contact: Immediately flush with water for 15 minutes or longer. Lift upper and lower lids to ensure removal of chemical. In case of persistent irritation, consult a physician.
- Skin contact: Wash skin with soap and water. Remove and launder contaminated clothing before reuse. In case of irritation, consult a physician.
- Ingestion: No hazards which require special first aid measures
- Inhalation: Move subject to fresh air. Administer artificial respiration if required. Get medical attention if required

**VII. Disposal Considerations:**

- Waste Disposal Method: Incinerate or place in chemical landfill in accordance with federal, state and local regulations. The material as sold is not a hazardous waste under RCRA regulations.

416645-273



### Material Safety Data Sheet

No.: 2400 Rev. No.: 2  
Date Revised: 6/3/97

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name(s): (CELITE™ - C1 AQUA-CEL™, C110, C218, C224, C225, C226, C228, C229, C230, C232, C241, C281, C319, C324, C427, C499, C501, C503, C503RV, C513, C522, C535, C543, C552, C560, C568, C578P, C584, FILTER AID FOR COOKING OIL, HYFLO™ DC, C HSC, HYFLO™ RV, HYFLO™ SUPER CEL™, SUPER FINE SUPER FLOSS™, SUPER FLOSS™, WHITE MIST™, X-4, X-5, X-6, X-7

Generic Name: FLUX CALCINED DIATOMACEOUS EARTH  
Chemical Name: SiO<sub>2</sub>  
Manufacturer: CELITE CORPORATION  
Address: P.O. BOX 518  
City: [redacted] State: GA Zip: 30438

CAS: 68855-64-9  
EINECS: 272-489-0  
FEMA: 50  
Telephone: (803) 735-7791  
Emergency: CHEMTREC - USA: (800) 424-9300  
(International: (703) 527-3887 (collect))

#### 2. COMPOSITION INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	%	PEL AND TLV (OSHA 1910.1000)
FLUX CALCINED DIATOMACEOUS EARTH (CE)	68855-64-9	100	SEE BELOW
THIS PRODUCT MAY CONTAIN UP TO 75% CRYSTALLINE SILICA:			
CRISTOBAULITE	14464-45-1	< 70	0.5mg/m <sup>3</sup> RESPIRABLE CRISTOBAULITE OSHA
QUARTZ	14808-60-7	< 5	1mg/m <sup>3</sup> RESPIRABLE QUARTZ OSHA

#### 3. HAZARD IDENTIFICATION

**Summary:** THIS PRODUCT CONTAINS CRYSTALLINE SILICA (CS), WHICH IS CONSIDERED A HAZARD BY INHALATION. IARC HAS CLASSIFIED INHALATION OF CE AS CARCINOGENIC FOR HUMANS (GROUP 1). CE IS LISTED BY NTP AS A SUBSTANCE WHICH MAY REASONABLY BE ANTICIPATED TO BE A CARCINOGEN. INHALATION OF CE IS ALSO A KNOWN CAUSE OF SILICOSIS, A NONCANCER- OUS LUNG DISEASE.

**Medical conditions which may be aggravated:** PRE-EXISTING UPPER RESPIRATORY AND LUNG DISEASE SUCH AS, BUT NOT LIMITED TO BRONCHITIS, EMPHYSEMA AND ASTHMA.  
**Target Organs:** LUNGS, EYES

**Acute Hazard Effects:** TRANSITORY UPPER RESPIRATORY OR EYE IRRITATION.  
**Chronic Hazard:** Prolonged INHALATION OF CRYSTALLINE SILICA HAS BEEN CLASSIFIED BY IARC AS CARCINOGENIC FOR HUMANS (GROUP 1). INHALATION OF CRYSTALLINE SILICA IS ALSO A KNOWN CAUSE OF SILICOSIS, A NONCANCEROUS LUNG DISEASE CAUSED BY EXCESSIVE EXPOSURE TO CRYSTALLINE SILICA.

**Primary Entry Routes:** INHALATION, DUST CONTACT WITH EYES.  
**Inhalation:** IRRITATION AND SORENESS IN THROAT & NOSE IN EXTREME EXPOSURES SOME CONGESTION MAY OCCUR.  
**Eyes:** TEMPORARY IRRITATION OR INFLAMMATION.  
**Skin Contact:** NA      Skin Absorption: NA      Ingestion: NOT HAZARDOUS WHEN INGESTED.

#### 4. FIRST AID MEASURES

**Inhalation:** REMOVE TO FRESH AIR, DRINK WATER TO CLEAR THROAT AND BLOW NOSE TO EVACUATE DUST.  
**Eyes:** FLUSH EYES WITH LARGE QUANTITIES OF WATER, IF IRRITATION PERSISTS CONSULT A PHYSICIAN.  
**Skin Contact:** NA      Skin Absorption: NA      Ingestion: NA

#### 5. FIRE FIGHTING MEASURES

**Flash Point (Method):** NONFLAMMABLE  
**Flammable Limits:** LEL: NA      UEL: NA      NFPA Flammable/Corrosive/Liquid Classification: NA  
**Extinguishing Media:** NA      Unusual Fire or Explosion Hazards: NONE      Auto-ignition Temperature: NA  
Special Fire-fighting Procedures: NONE

#### 6. ACCIDENTAL RELEASE MEASURES

**Procedures for Solids:** VACUUM CLEAN DUST WITH EQUIPMENT FITTED WITH HEPA FILTER. USE A DUST SUPPRESSANT SUCH AS WATER IF SWEEPING IS NECESSARY.

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**7. HANDLING AND STORAGE**

MINIMIZE DUST GENERATION AND ACCUMULATION. AVOID BREATHING DUST. AVOID CONTACT WITH EYES. SEAL BROKEN BAGS IMMEDIATELY. CONTINUE TO FOLLOW ALL MSDS LABEL WARNINGS WHEN HANDLING EMPTY CONTAINERS.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Goggles: GOGGLES OR SAFETY GLASSES WITH SIDESHIELDS ARE RECOMMENDED.  
Gloves: NOT NORMALLY REQUIRED.  
Respirator: <10X PEL, USE MSA 300; <100X PEL, USE MSA ULTRA-TWIN WITH H FILTER; <200X PEL, USE MSA 01-00-06 WITH TYPE C SUPPLIED AIR UNIT (CONT. FLOW MODE); OR EQUIVALENT.  
Ventilation: USE SUFFICIENT NATURAL OR MECHANICAL VENTILATION TO KEEP DUST LEVEL BELOW PEL.  
Other: Special Considerations for repair/maintenance of contaminated equipment: INSURE PROPER RESPIRATORY PROTECTION.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance and Color: FINE WHITE POWDER, NO OOR.  
Boiling Point: NA  
Vapor Pressure: NA  
Water Solubility (%): NEGLIGIBLE  
Evaporation Rate ( ): NA  
Melting Point: NA  
Vapor Density (Air=1): NA  
Specific Gravity (water = 1): 2.3  
% Volatile by Volume: NIL  
pH: 9-10.5

**10. STABILITY AND REACTIVITY**

MATERIAL IS STABLE.  
Chemical Incompatibilities: HYDROFLUORIC ACID.  
HAZARDOUS POLYMERIZATION CANNOT OCCUR.  
Conditions to Avoid: NONE IN DESIGNED USE.

**11. TOXICOLOGICAL INFORMATION**

Summary: THIS PRODUCT CONTAINS CRYSTALLINE SILICA (CS), WHICH IS CONSIDERED A HAZARD BY INHALATION. IARC HAS CLASSIFIED CS AS CARCINOGENIC FOR HUMANS (GROUP 1). CS IS LISTED BY NTP AS A SUBSTANCE WHICH MAY REASONABLY BE ANTICIPATED TO BE A CARCINOGEN. CS IS ALSO A KNOWN CAUSE OF SILICOSIS, A NONCANCEROUS LUNG DISEASE.

**12. ECOLOGICAL INFORMATION**

GENERALLY CONSIDERED CHEMICALLY INERT IN THE ENVIRONMENT. USED MATERIAL WHICH HAS BECOME CONTAMINATED MAY HAVE SIGNIFICANTLY DIFFERENT CHARACTERISTICS BASED ON THE CONTAMINANT AND SHOULD BE EVALUATED ACCORDINGLY.

**13. DISPOSAL CONSIDERATIONS**

WASTE IS NOT HAZARDOUS AS DEFINED BY RCRA (40 CFR 261). METHOD OF DISPOSAL IS TO LANDFILL. OTHER STATE AND LOCAL REGULATIONS MAY VARY. CONSULT LOCAL AGENCIES AS NEEDED. USED MATERIAL, WHICH HAS BECOME CONTAMINATED MAY HAVE SIGNIFICANTLY DIFFERENT CHARACTERISTICS BASED ON THE CONTAMINANTS AND SHOULD BE EVALUATED ACCORDINGLY.

**14. TRANSPORTATION INFORMATION**

D.O.T. Proper Shipping Name: EARTH, DIATOMACEOUS, CRUDE OR GROUND Hazard Classification: NOT CLASSIFIED  
Reportable Quantities: NOT APPLICABLE (UN (United Nations), RA (North America) Number: NOT APPLICABLE

**15. REGULATORY INFORMATION**

OSHA Hazard Communication Standard, 29 CFR 1910.1200: MATERIAL IS CONSIDERED HAZARDOUS. SEE SECTION 3 OF THIS MSDS.  
RCRA: THIS MATERIAL IS NOT DEFINED AS HAZARDOUS WASTE PER 40 CFR 261.  
TSCA: THIS MATERIAL IS LISTED IN THE TSCA INVENTORY, AND IS NOT OTHERWISE REGULATED BY TSCA SEC. 4, 5, 6, 7 OR 12.  
CERCLA: MATERIAL IS NOT REPORTABLE UNDER CERCLA. LOCAL REQUIREMENTS MAY VARY.  
SARA: 311/312 HAZARD CATEGORIES - IMMEDIATE AND DELAYED HEALTH. 315 REPORTABLE INGREDIENTS - NONE.  
California Proposition 65: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

**16. OTHER INFORMATION**

Storage Segregation Hazard Class: NA  
Special Handling/Storage: REPAIR ALL BROKEN BAGS IMMEDIATELY.  
Special Workplace Engineering Controls: ADEQUATE VENTILATION TO KEEP DUST LEVEL BELOW PEL.  
Prepared/Revised By: CHRIS PALLEY

Title: DIRECTOR, HEALTH & SAFETY SERVICES

As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state laws. However, no warranty or representation with respect to such information is intended or given.

# Baroid Environmental, Safety and Transportation Data Sheet



## QUIK-GEL®

<b>I. PRODUCT IDENTIFICATION</b>		
<b>SUPPLIER</b> BAROID DRILLING FLUIDS, INC.	<b>REGULAR TELEPHONE NUMBER</b> 713/987-5900 <b>EMERGENCY TELEPHONE NO.</b> 800 424-9300	
<b>ADDRESS</b> P.O. BOX 1675 HOUSTON, TEXAS 77251		
<b>TRADE NAME</b> QUIK-GEL		
<b>GENERIC DESCRIPTION</b> HIGH YIELD BENTONITE; SODIUM MONTMORILLONITE 1302-78-9		
<b>II. HAZARDOUS INGREDIENTS</b>		
<b>MATERIAL OR COMPONENT</b>	<b>%</b>	<b>HAZARD DATA</b>
SILICA 14808-60-7	2-6%	LOW CONCENTRATIONS OF
		CRYSTALLINE SILICA (SiO <sub>2</sub> )
		IN THE FORM OF QUARTZ,
		CRISTOBALITE AND TRIDYMITE
		MAY BE PRESENT
		(SEE SECTION V)
<b>III. PHYSICAL DATA</b>		
<b>BOILING POINT (Deg F)</b> NA	<b>MELTING POINT</b> NA	<b>FREEZING POINT</b> NA
<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1)</b> 2.5	<b>VAPOR PRESSURE (mm Hg)</b> NA	
<b>VAPOR DENSITY (AIR = 1)</b> NA	<b>SOLUBILITY IN WATER, % BY WT.</b> NA	
<b>% VOLATILES BY VOLUME</b> NA	<b>EVAPORATION RATE (BUTYL ACETATE = 1)</b> NA	
<b>APPEARANCE AND ODOR</b> GREY, TAN POWDER, NO ODOR	<b>DENSITY @ 20 Deg C (Uncompacted)</b> 47.6 LB/CU	
<b>pH</b> NA		

NA - Not Applicable ND - Not Determined

All information, recommendations and suggestions herein concerning our product are based on tests and data believed to be reliable, however, it is the user's responsibility to determine the safety, toxicity, and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Baroid Corporation as to the effects of such use, the results to be obtained, or the safety and toxicity

of the product nor does Baroid Corporation assume any liability arising from the use by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

**IV. FIRE AND EXPLOSION DATA**

NOT FLAMMABLE OR EXPLOSIVE DOES NOT SUPPORT COMBUSTION  
 EXTINGUISHING MEDIA: USE MEDIA APPLICABLE TO SURROUNDING FIRE  
 SPECIAL FIRE FIGHTING PROCEDURES NONE ANTICIPATED

**V. HEALTH HAZARD INFORMATION**

CARCINOGENICITY - SEE ROUTES OF EXPOSURE AND EFFECTS (BELOW)

ACUTE ORAL LD50 ND	ACUTE DERMAL LD50 ND	AQUATIC TOXICITY LC50 ND
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**ROUTES OF EXPOSURE AND EFFECTS**

THIS PRODUCT CONTAINS FREE CRYSTALLINE SILICA WHICH ACCORDING TO THE IARC HAS EXHIBITED LIMITED EVIDENCE OF CARCINOGENICITY IN HUMANS. PROLONGED INHALATION OF THE POWDER MAY RESULT IN SILICOSIS, A NONCANCEROUS LUNG DISEASE. OSHA FINAL LIMITS TABLE Z-3 MINERAL DUSTS.  
 CRYSTALLINE SILICA QUARTZ (RESPIRABLE) 10 mg/m<sup>3</sup> ----- %SiO<sub>2</sub> + 2  
 QUARTZ (TOTAL DUST) 30 mg/m<sup>3</sup> ----- %SiO<sub>2</sub> + 2  
 IF CRISTOBALITE OR TRIDYMITE IS DETECTED, USE ONE HALF THE VALUE CALCULTAED FROM FORMULA FOR QUARTZ.  
 EYES: IRRITANT SKIN: POTENTIAL IRRITANT INHALATION: IRRITATION TO LUNGS, NOSE, AND THROAT; PROLONGED INHALATION MAY CAUSE LUNG INJURY OR DISEASE.

**EMERGENCY AND FIRST AID PROCEDURES**

NORMAL PERSONAL HYGIENE.

<b>VI. REACTIVITY DATA</b>
CONDITIONS CONTRIBUTING TO INSTABILITY STABLE
INCOMPATIBILITY NONE
HAZARDOUS DECOMPOSITION PRODUCTS NONE
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION NONE
<b>VII. SPILL OR LEAK PROCEDURES</b>
STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED NORMAL HOUSEKEEPING; CAUSES SLIPPERY SURFACES WHEN WET
NEUTRALIZING CHEMICALS NA
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS
<b>VIII. INDUSTRIAL HYGIENE CONTROL MEASURES</b>
VENTILATION REQUIREMENTS MECHANICAL, GENERAL ROOM VENTILATION. USE LOCAL VENTILATION TO MAINTAIN TLV (SEE SECTION V)
SPECIFIC PERSONAL PROTECTIVE EQUIPMENT
RESPIRATORY DUST MASK
EYE SAFETY GLASSES, GOGGLES
GLOVES WORK GLOVES
OTHER CLOTHING AND EQUIPMENT APRON, EYEWASH

**IX. SPECIAL PRECAUTIONS**

**PRECAUTIONARY STATEMENTS**

RECOMMENDED LABELING:  
 FRONT PANEL: CAUTION! SEE BACK PANEL FOR CAUTION BEFORE USE. BACK  
 PANEL: CAUTION THIS PRODUCT CONTAINS FREE CRYSTALLINE SILICA  
 WHICH ACCORDING TO THE IARC HAS EXHIBITED LIMITED EVIDENCE OF  
 CARCINOGENICITY IN HUMANS. PROLONGED INHALATION OF THE POWDER  
 MAY RESULT IN SILICOSIS, A NONCANCEROUS LUNG DISEASE. AVOID CREAT-  
 ING DUSTY CONDITIONS AND USE A NIOSH APPROVED DUST RESPIRATOR

**OTHER HANDLING AND STORAGE REQUIREMENTS**

STORE IN SHELTERED AREA OR COVER TO PROTECT FROM MOISTURE.

**X. DEPARTMENT OF TRANSPORTATION INFORMATION**

PROPER SHIPPING NAME : NOT REGULATED AS HAZARDOUS	PLACARDS : NONE
HAZARD CLASS : NOT HAZARDOUS	REPORTABLE QUANTITY : NONE
HAZARDOUS SUBSTANCE : NONE	ID NUMBER : NONE
LABEL : NONE REQUIRED	

**XI. REGULATORY INFORMATION****STATUS ON SUBSTANCE LISTS**

Comprehensive Environmental Response, Compensation and Liability Act of 1980, (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4.

Components present in this product which may require notification are:

Chemical	CAS Number
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NONE

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on RQs

Components present in this product at a level which could require reporting under the statute are:

NONE

SARA requires the submission of annual reports of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDS that are copied and distributed for this material

Components present in this product at a level which could require reporting under the statute are:

NONE

Toxic Substances Control Act (TSCA)

The ingredients of this product are on the TSCA inventory.

**XII. STATE RIGHT TO KNOW**

QUARTZ IS ON CANADIAN WHMIS (WORKPLACE HAZARDOUS MATERIAL INFORMATION SYSTEM) INGREDIENT DISCLOSURE LIST, MASSACHUSETTS SUBSTANCE LIST, NEW JERSEY RIGHT TO KNOW HAZARDOUS SUBSTANCE LIST AND PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.