

MATERIAL SAFETY DATA SHEET

Product Trade Name: **CRYSTAL-DRIL SYSTEM**

Revision Date: 21-Dec-2012

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: CRYSTAL-DRIL SYSTEM
Synonyms: None
Chemical Family: Blend
Application: Water-Based Drilling Fluid

Manufacturer/Supplier: Baroid Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT | ACGIH TLV-TWA | OSHA PEL-TWA |
|--------------------|------------|---------|----------------|----------------|
| Potassium chloride | 7447-40-7 | 1 - 5% | Not applicable | Not applicable |

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin: Wash with soap and water. Get medical attention if irritation persists.

Eyes: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician: Not Applicable

5. FIRE FIGHTING MEASURES

| | |
|-----------------------------------------|----------------|
| Flash Point/Range (F): | Not Determined |
| Flash Point/Range (C): | Not Determined |
| Flash Point Method: | Not Determined |
| Autoignition Temperature (F): | Not Determined |
| Autoignition Temperature (C): | Not Determined |
| Flammability Limits in Air - Lower (%): | Not Determined |
| Flammability Limits in Air - Upper (%): | Not Determined |

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Not applicable.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 1, Flammability 0, Reactivity 0
HMS Ratings: Health 1, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing.

Storage Information Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls None known.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

Hand Protection Impervious rubber gloves.

Skin Protection Normal work coveralls.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------|----------------|
| Physical State: | Liquid |
| Color: | Off white |
| Odor: | Odorless |
| pH: | Not Determined |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--------------------------------------------|----------------|
| Specific Gravity @ 20 C (Water=1): | Not Determined |
| Density @ 20 C (lbs./gallon): | Not Determined |
| Bulk Density @ 20 C (lbs/ft3): | Not Determined |
| Boiling Point/Range (F): | Not Determined |
| Boiling Point/Range (C): | Not Determined |
| Freezing Point/Range (F): | Not Determined |
| Freezing Point/Range (C): | Not Determined |
| Vapor Pressure @ 20 C (mmHg): | Not Determined |
| Vapor Density (Air=1): | Not Determined |
| Percent Volatiles: | Not Determined |
| Evaporation Rate (Butyl Acetate=1): | Not Determined |
| Solubility in Water (g/100ml): | Soluble |
| Solubility in Solvents (g/100ml): | Not Determined |
| VOCs (lbs./gallon): | Not Determined |
| Viscosity, Dynamic @ 20 C (centipoise): | Not Determined |
| Viscosity, Kinematic @ 20 C (centistokes): | Not Determined |
| Partition Coefficient/n-Octanol/Water: | Not Determined |
| Molecular Weight (g/mole): | Not Determined |

10. STABILITY AND REACTIVITY

| | |
|--------------------------------------|-------------------------------------|
| Stability Data: | Stable |
| Hazardous Polymerization: | Will Not Occur |
| Conditions to Avoid | None anticipated |
| Incompatibility (Materials to Avoid) | Strong oxidizers. |
| Hazardous Decomposition Products | Carbon monoxide and carbon dioxide. |
| Additional Guidelines | Not Applicable |

11. TOXICOLOGICAL INFORMATION

| | |
|---------------------------------|------------------------------------------------------------------------------------------------------------|
| Principle Route of Exposure | Eye or skin contact, inhalation. |
| Inhalation | May cause respiratory irritation. |
| Skin Contact | May cause skin irritation. |
| Eye Contact | May cause eye irritation. |
| Ingestion | Irritation of the mouth, throat, and stomach. |
| Aggravated Medical Conditions | Skin disorders. |
| Chronic Effects/Carcinogenicity | No data available to indicate product or components present at greater than 1% are chronic health hazards. |
| Other Information | None known. |
| Toxicity Tests | |
| Oral Toxicity: | Not determined |
| Dermal Toxicity: | Not determined |
| Inhalation Toxicity: | Not determined |

Primary Irritation Effect: Not determined
Carcinogenicity Not determined
Genotoxicity: Not determined
Reproductive / Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined
Persistence/Degradability Not determined
Bio-accumulation Not determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined
Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Transportation Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

| | |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| US TSCA Inventory | All components listed on inventory or are exempt. |
| EPA SARA Title III Extremely Hazardous Substances | Not applicable |
| EPA SARA (311,312) Hazard Class | Acute Health Hazard |
| EPA SARA (313) Chemicals | This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372). |
| EPA CERCLA/Superfund Reportable Spill Quantity | Not applicable. |
| EPA RCRA Hazardous Waste Classification | If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA. |
| California Proposition 65 | All components listed do not apply to the California Proposition 65 Regulation. |
| MA Right-to-Know Law | One or more components listed. |
| NJ Right-to-Know Law | One or more components listed. |
| PA Right-to-Know Law | One or more components listed. |

Canadian Regulations

| | |
|-------------------------------|---------------------------------------------------|
| Canadian DSL Inventory | All components listed on inventory or are exempt. |
| WHMIS Hazard Class | Un-Controlled |

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

Additional Information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

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*****END OF MSDS*****