

## MATERIAL SAFETY DATA SHEET

**Product Trade Name:** KCL POLYMER WATER GLYCOL BASED MUD SYSTEM

**Revision Date:** 12-Sep-2013

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.  
15 Marriott Road  
Jandakot  
WA 6164  
Australia

ACN Number: 009 000 775  
Telephone Number: 61 (08) 9455 8300  
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**  
Australia: 08-64244950  
Papua New Guinea: 05 1 281 575 5000  
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**  
Australia: 000  
Papua New Guinea: 000  
New Zealand: 111

### Identification of Substances or Preparation

**Product Trade Name:** KCL POLYMER WATER GLYCOL BASED MUD SYSTEM  
**Synonyms:** None  
**Chemical Family:** Blend  
**UN Number:** None  
**Dangerous Goods Class:** None  
**Subsidiary Risk:** None  
**Hazchem Code:** None Allocated  
**Poisons Schedule:** None Allocated  
**Application:** Water-Based Drilling Fluid

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

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT (w/w) | Australia NOHSC | New Zealand WES | ACGIH TLV-TWA |
|------------|------------|---------------|-----------------|-----------------|---------------|
|------------|------------|---------------|-----------------|-----------------|---------------|

|                                 |            |          |                            |                            |                              |
|---------------------------------|------------|----------|----------------------------|----------------------------|------------------------------|
| Polyethylene glycol butyl ether | 9004-77-7  | 1 - 5%   | Not applicable             | Not applicable             | Not applicable               |
| Crystalline silica, quartz      | 14808-60-7 | 0 - 1%   | TWA: 0.1 mg/m <sup>3</sup> | TWA: 0.2 mg/m <sup>3</sup> | TWA: 0.025 mg/m <sup>3</sup> |
| Potassium chloride              | 7447-40-7  | 10 - 30% | Not applicable             | Not applicable             | Not applicable               |
| Limestone                       | 1317-65-3  | 1 - 5%   | TWA: 10 mg/m <sup>3</sup>  | TWA: 10 mg/m <sup>3</sup>  | 10 mg/M3                     |

**Non-Hazardous Substance to Total of 100%**

### 3. HAZARDS IDENTIFICATION

#### Hazard Overview

#### **CAUTION! - ACUTE HEALTH HAZARD**

May cause eye, skin, and respiratory irritation.

#### **DANGER! - CHRONIC HEALTH HAZARD**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

#### Risk Phrases

R36 Irritating to eyes.

R49 May cause cancer by inhalation.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

#### HSNO Classification

6.1D Acutely Toxic Substances

6.3B Mildly irritating to the skin

6.4A Irritating to the eye

6.7A Known or presumed human carcinogens

6.9A Toxic to human target organs or systems

9.3C Harmful to terrestrial vertebrates

### 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. Remove contaminated clothing and launder before reuse.

#### 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

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Special Exposure Hazards**

Decomposition in fire may produce toxic gases.

**Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**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. This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Storage Information**

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Engineering Controls**

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

**Respiratory Protection**

Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), or equivalent respirator when using this product.

**Hand Protection**

Impervious rubber gloves.

**Skin Protection**

Rubber apron. Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection**

Wear safety glasses or goggles to protect against exposure.

**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 |
| Specific Gravity @ 20 C (Water=1):         | 1.32           |
| Density @ 20 C (kg/l):                     | 1.32           |
| Bulk Density @ 20 C (kg/M3):               | Not Determined |
| Boiling Point/Range (C):                   | Not Determined |
| Freezing Point/Range (C):                  | Not Determined |
| Pour Point/Range (C):                      | Not Determined |
| Flash Point/Range (C):                     | Not Determined |
| Flash Point Method:                        | Not Determined |
| Autoignition Temperature (C):              | Not Determined |
| Flammability Limits in Air - Lower (g/m³): | Not Determined |
| Flammability Limits in Air - Lower (%):    | Not Determined |
| Flammability Limits in Air - Upper (g/m³): | Not Determined |
| Flammability Limits in Air - Upper (%):    | 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 (g/l):                                | 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 |
| Decomposition Temperature (C):             | Not Determined |

## 10. STABILITY AND REACTIVITY

|                                      |  |
|--------------------------------------|--|
| Stability Data:                      | Stable   |
| Hazardous Polymerization:            | Will Not Occur   |
| Conditions to Avoid                  | None known.  |
| Incompatibility (Materials to Avoid) | Hydrofluoric acid.   |
| Hazardous Decomposition Products     | Chlorine. Carbon monoxide and carbon dioxide. Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C). |
| Additional Guidelines                | Not Applicable   |

## 11. TOXICOLOGICAL INFORMATION

|                             |                                  |
|-----------------------------|----------------------------------|
| Principle Route of Exposure | Eye or skin contact, inhalation. |
|-----------------------------|----------------------------------|

### Symptoms related to exposure

#### Acute Toxicity

##### Inhalation

May cause respiratory irritation. Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

##### Eye Contact

May cause eye irritation.

**Skin Contact**  
**Ingestion**

May cause skin irritation.  
Irritation of the mouth, throat, and stomach.

**Chronic Effects/Carcinogenicity**

**Silicosis:** Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

**Cancer Status:** The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Toxicology data for the components**

| Substances                      | CAS Number | LD50 Oral   | LD50 Dermal       | LC50 Inhalation   |
|---------------------------------|------------|---|-------------------|-------------------|
| Polyethylene glycol butyl ether | 9004-77-7  | > 5000 mg/kg  | 6540 mg/kg        | No data available |
| Crystalline silica, quartz      | 14808-60-7 | 500 mg/kg ( Rat )   | No data available | No data available |
| Potassium chloride              | 7447-40-7  | 2600 mg/kg (Rat)<br>2430 mg/kg (Rat)<br>3020 mg/kg (Rat)<br>383 mg/kg (Mouse)<br>1500 mg/kg (Mouse) | No data available | No data available |
| Limestone                       | 1317-65-3  | No data available   | No data available | No data available |

**12. ECOLOGICAL INFORMATION**

**Ecotoxicological Information**

**Ecotoxicity Product**

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

**Ecotoxicity Substance**

| Substances                      | CAS Number | Toxicity to Algae                         | Toxicity to Fish  | Toxicity to Microorganisms | Daphnia Magna (Water Flea)               |
|---------------------------------|------------|---|---|----------------------------|--|
| Polyethylene glycol butyl ether | 9004-77-7  | EC50: 391 mg/l (Skeletonema costatum)     | EC50: 475 ppm (Abra alba)   | No information available   | TLM48: 310 mg/l (Acartia tonsa)          |
| Crystalline silica, quartz      | 14808-60-7 | No information available                  | No information available  | No information available   | No information available                 |
| Potassium chloride              | 7447-40-7  | EC50: 2500 mg/l (Desmodesmus subspicatus) | LC50: 1060 mg/L (Lepomis macrochirus);<br>LC50: 750-1020 mg/L (Pimephales promelas) | No information available   | TLM96: 100-330 ppm (Crangon crangon)     |
| Limestone                       | 1317-65-3  | No information available                  | No information available  | No information available   | TLM96: >1,000,000 ppm (Mysidopsis bahia) |

## **12.2 Persistence and degradability**

No information available

## **12.3 Bioaccumulative potential**

No information available

| <b>Substances</b>               | <b>Log Pow</b> |
|---------------------------------|----------------|
| Polyethylene glycol butyl ether | 0.51           |

## **12.4 Mobility in soil**

No information available

## **12.5 Results of PBT and vPvB assessment**

No information available.

## **12.6 Other adverse effects**

# **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**

### **ADR**

Not restricted

## **Air Transportation**

### **ICAO/IATA**

Not restricted

## **Sea Transportation**

### **IMDG**

Not restricted

## **Other Transportation Information**

**Labels:** None

# **15. REGULATORY INFORMATION**

## **Chemical Inventories**

### **Australian AICS Inventory**

All components listed on inventory or are exempt.

### **New Zealand Inventory of Chemicals**

All components listed on inventory or are exempt.

### **US TSCA Inventory**

All components listed on inventory or are exempt.

### **EINECS Inventory**

This product, and all its components, complies with EINECS

|                       |  |
|-----------------------|--|
| <b>Classification</b> | T - Toxic.<br><br>Crystalline silica is not classified as a carcinogen in EU Council Directives 67/548/EEC and 88/379/EEC.   |
| <b>Risk Phrases</b>   | R36 Irritating to eyes.<br><br>R49 May cause cancer by inhalation.<br>R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation. |
| <b>Safety Phrases</b> | S25 Avoid contact with eyes.   |

## 16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS  
Not applicable

### Contact

#### Australian Poisons Information Centre

24 Hour Service: - 13 11 26

Police or Fire Brigade: - 000 (exchange): - 1100

#### New Zealand National Poisons Centre

0800 764 766

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

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

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