

## MATERIAL SAFETY DATA SHEET

**Product Trade Name:** INNOVERT Mud System - Australia

**Revision Date:** 25-Sep-2014

### 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:** INNOVERT Mud System - Australia  
**Synonyms:** None  
**Chemical Family:** Blend  
**Dangerous Goods Class:** None  
**Subsidiary Risk:** None  
**Hazchem Code:** None Allocated  
**Poisons Schedule:** None Allocated  
**Application:** Mud System

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

### 2. HAZARDS IDENTIFICATION

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

**Hazard Overview**

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

Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

**Classification**

T - Toxic.

**Risk Phrases**

R49 May cause cancer by inhalation.  
 R38 Irritating to skin.  
 R43 May cause sensitization by skin contact.  
 R66 Repeated exposure may cause skin dryness or cracking.  
 R42/43 May cause sensitization by inhalation and skin contact.  
 R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**Safety Phrases**

S22 Do not breathe dust.  
 S24/25 Avoid contact with skin and eyes.

**HSNO Classification**

6.4A Irritating to the eye  
 6.5B Contact sensitisers  
 6.7A Known or presumed human carcinogens  
 6.9B Harmful to human target organs or systems

<b>3. COMPOSITION/INFORMATION ON INGREDIENTS</b>
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Substances	CAS Number	PERCENT (w/w)	Australia	NOHSC	New Zealand	ACGIH TLV-TWA
			WES			
Distillates (Fischer-Tropsch), C8-26-branched and linear	848301-67-7	30 - 60%	Not applicable	Not applicable	Not applicable	Not applicable
Barium sulfate	7727-43-7	5 - 10%	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>
Calcium chloride, dihydrate	10035-04-8	1 - 5%	Not applicable	Not applicable	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	1 - 5%	Not applicable	Not applicable	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	0.1 - 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>	TWA: 0.025 mg/m <sup>3</sup>

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

<b>4. FIRST AID MEASURES</b>
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**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, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

**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** This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud if this product becomes dry. Avoid breathing or creating dust. 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 dried product. Avoid contact with eyes, skin, or clothing. Avoid breathing mist.

**Storage Information** Store away from oxidizers. Store in a cool well ventilated area.

## 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** When the potential exists for dust of this product to be created, wear a NIOSH certified, European Standard En 149, AS/NZS 1715:2009, or equivalent respirator when using this product.  
When the potential exists for aerosols or mists of this product to be created, use a respirator with a particulate filter for oil aerosols or a supplied-air respirator as needed for adequate protection.  
When the potential exists for heated vapors or fumes of this product to be created, use a respirator with an organic-vapor filter or a supplied-air respirator as needed for adequate protection.

**Hand Protection** Impervious rubber gloves. Nitrile gloves. Neoprene gloves. Butyl rubber gloves.

<b>Skin Protection</b>	Normal work coveralls.
<b>Eye Protection</b>	Chemical goggles; also wear a face shield if splashing hazard exists.
<b>Other Precautions</b>	Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Liquid
<b>Color:</b>	Brown
<b>Odor:</b>	Mild hydrocarbon
<b>pH:</b>	Not Determined
<b>Specific Gravity @ 20 C (Water=1):</b>	Not Determined
<b>Density @ 20 C (kg/l):</b>	Not Determined
<b>Bulk Density @ 20 C (kg/M3):</b>	Not Determined
<b>Boiling Point/Range (C):</b>	Not Determined
<b>Freezing Point/Range (C):</b>	Not Determined
<b>Pour Point/Range (C):</b>	Not Determined
<b>Flash Point/Range (C):</b>	> 86
<b>Flash Point Method:</b>	PMCC
<b>Autoignition Temperature (C):</b>	Not Determined
<b>Flammability Limits in Air - Lower (g/m<sup>3</sup>):</b>	Not Determined
<b>Flammability Limits in Air - Lower (%):</b>	Not Determined
<b>Flammability Limits in Air - Upper (g/m<sup>3</sup>):</b>	Not Determined
<b>Flammability Limits in Air - Upper (%):</b>	Not Determined
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	Not Determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Insoluble
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>VOCs (g/l):</b>	Not Determined
<b>Viscosity, Dynamic @ 20 C (centipoise):</b>	Not Determined
<b>Viscosity, Kinematic @ 20 C (centistokes):</b>	Not Determined
<b>Partition Coefficient/n-Octanol/Water:</b>	Not Determined
<b>Molecular Weight (g/mole):</b>	Not Determined
<b>Decomposition Temperature (C):</b>	Not Determined

## 10. STABILITY AND REACTIVITY

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

## 11. TOXICOLOGICAL INFORMATION

<b>Principle Route of Exposure</b>	Eye or skin contact, inhalation.
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## Symptoms related to exposure

### **Acute Toxicity**

#### **Inhalation**

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**

May cause an allergic skin reaction.

#### **Ingestion**

Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

### **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**

<b>Substances</b>	<b>CAS Number</b>	<b>LD50 Oral</b>	<b>LD50 Dermal</b>	<b>LC50 Inhalation</b>
Distillates (Fischer-Tropsch), C8-26-branched and linear	848301-67-7	No data available	No data available	No data available
Barium sulfate	7727-43-7	> 307,000 mg/kg (Rat) > 2000mg/kg (Rat) (similar substance - barium dichloride)	> 2,000 mg/kg (Rabbit)	No data available
Calcium chloride, dihydrate	10035-04-8	2301 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	No data available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	> 2020 mg/kg (Rat)	> 2000 mg/kg (Rat)	No data available
Crystalline silica, quartz	14808-60-7	> 5000 mg/kg (Rat)	No data available	No data available

## **12. ECOLOGICAL INFORMATION**

## Ecotoxicological Information

### Ecotoxicity Product

<b>Acute Fish Toxicity:</b>	Not determined
<b>Acute Crustaceans Toxicity:</b>	Not determined
<b>Acute Algae Toxicity:</b>	Not determined

### Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Distillates (Fischer-Tropsch), C8-26-branched and linear	848301-67-7	No information available	No information available	No information available	No information available
Barium sulfate	7727-43-7	EC50(72h): (growth rate) > 61.1 mg/L (Pseudokirchnerella subcapitata) EC50(72h): > 34.31 mg/L (Pseudokirchnerella subcapitata) (elemental Barium)	TLM96: 7500 ppm (Oncorhynchus mykiss) LC50(96h): > 174 mg/L (Danio rerio) LC50(96h): > 97.5 mg/L (Danio rerio) (elemental Barium) LC50(28d): 42700 ug/L (Oncorhynchus mykiss) (elemental Barium)	EC50(3h): (respiration rate) >1000 mg/L (activated sludge)	TLM96: > 1,000,000 ppm (Mysidopsis bahia) LC50(48h): 14500 ug/L (Daphnia magna) (elemental Barium) EC16(3wk): 5800 ug/L (Daphnia magna) (elemental Barium) EC16(3wk): 4800 ug/L (Daphnia magna)
Calcium chloride, dihydrate	10035-04-8	EC50(72h): 2900 mg/L (Pseudokirchnerella subcapitata)	LC50(96h): 4630 mg/L (Pimephales promelas)	NOEC: 2000 mg/L (activated sludge, industrial)	EC50(48h): 1285 mg/L (Daphnia magna) EC16(21d): 320 mg/L (Daphnia magna) EC50(21d) 610 mg/L (reproduction) (Daphnia magna)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	EC50(72h): > 100 mg/L (growth rate) (Pseudokirchnerella subcapitata)	LC50(96h): > 100 mg/L (Danio rerio)	EC50(3h): > 100 mg/L (respiration rate) (Activated sludge)	IC50(48h): > 100 mg/L (Daphnia magna)
Crystalline silica, quartz	14808-60-7	No information available	LL0(96h): 10000 mg/L (Danio rerio) (similar substance)	No information available	LL50(24h): > 10000 mg/L (Daphnia magna) (similar substance)

### 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Distillates (Fischer-Tropsch), C8-26-branched and linear	848301-67-7	No information available
Barium sulfate	7727-43-7	The methods for determining biodegradability are not applicable to inorganic substances.
Calcium chloride, dihydrate	10035-04-8	The methods for determining biodegradability are not applicable to inorganic substances.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Readily biodegradable (71% @ 28d)
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

### 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Distillates (Fischer-Tropsch), C8-26-branched and linear	848301-67-7	No information available
Barium sulfate	7727-43-7	BCF: 1.2 - 74.4 L/kg (Lepomis macrochirus)
Calcium chloride, dihydrate	10035-04-8	No information available

Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	2.4
Crystalline silica, quartz	14808-60-7	No information available

**12.4. Mobility in soil**

No information available

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

No information available.

Substances	PBT and vPvB assessment
Crystalline silica, quartz	Not PBT/vPvB

**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**

**Australia Dangerous Goods**

**UN Number:** Not restricted.  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable

**IMDG/IMO**

**UN Number:** Not restricted.  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**IATA/ICAO**

**UN Number:** Not restricted.  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable

**Special Precautions for User:** None

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

**15. REGULATORY INFORMATION**

**Chemical Inventories**

**Australian AICS Inventory** Product contains one or more components not listed on inventory.  
**New Zealand Inventory of Chemicals** This product does not comply with NZIOC

**US TSCA Inventory** Product contains one or more components not listed on the inventory.  
**EINECS Inventory** This product does not comply with EINECS

**Classification** T - Toxic.

**Risk Phrases**

R49 May cause cancer by inhalation.  
R38 Irritating to skin.  
R43 May cause sensitization by skin contact.  
R66 Repeated exposure may cause skin dryness or cracking.  
R42/43 May cause sensitization by inhalation and skin contact.  
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**Safety Phrases**

S22 Do not breathe dust.  
S24/25 Avoid contact with skin and 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.

**Disclaimer Statement**

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