

## MATERIAL SAFETY DATA SHEET

Product Trade Name: **D-AIR 5000**

Revision Date: 30-Jan-2015

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: D-AIR 5000  
Synonyms: None  
Chemical Family: Blend  
Application: Defoamer

Manufacturer/Supplier: Halliburton Energy Services, Inc.  
P.O. Box 1431  
Duncan, Oklahoma 73536-0431  
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance  
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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Gypsum	13397-24-5	60 - 100%	TWA: 10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>
Calcium sulfate	7778-18-9	1 - 5%	TWA: 10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>
Calcium carbonate	471-34-1	1 - 5%	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>
Crystalline silica, quartz	14808-60-7	0.1 - 1%	TWA: 0.025 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2

More restrictive exposure limits may be enforced by some states, agencies, or other authorities.

### 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause mild eye, skin, and respiratory irritation. 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, AS/NZS 1715, or equivalent respirator when using this product. Review the Safety Data Sheet (SDS) for this product, which has been provided to your employer.

### 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.

<b>Skin</b>	Wash with soap and water. Get medical attention if irritation persists.
<b>Eyes</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
<b>Ingestion</b>	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.
<b>Notes to Physician</b>	Not Applicable

## 5. FIRE FIGHTING MEASURES

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

**Fire Extinguishing Media** All standard firefighting media.

**Special Exposure Hazards** Not applicable.

**Special Protective Equipment for Fire-Fighters** Not applicable.

**NFPA Ratings:** Health 1, Flammability 0, Reactivity 0  
**HMIS Ratings:** Health 1\*, Flammability 0, Physical Hazard 0 , PPE: E

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** None known.

**Procedure for Cleaning / Absorption** Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. HANDLING AND STORAGE

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

**Storage Information** Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Store in a cool, dry location.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Engineering Controls</b>	Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.
<b>Respiratory Protection</b>	Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.
<b>Hand Protection</b>	Rubber gloves.
<b>Skin Protection</b>	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.
<b>Eye Protection</b>	Wear safety glasses or goggles to protect against exposure.
<b>Other Precautions</b>	Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Powder
<b>Color:</b>	White to gray
<b>Odor:</b>	Odorless
<b>pH:</b>	Not Determined
<b>Specific Gravity @ 20 C (Water=1):</b>	2.21 - 2.31
<b>Density @ 20 C (lbs./gallon):</b>	Not Determined
<b>Bulk Density @ 20 C (lbs/ft3):</b>	Not Determined
<b>Boiling Point/Range (F):</b>	Not Determined
<b>Boiling Point/Range (C):</b>	Not Determined
<b>Freezing Point/Range (F):</b>	Not Determined
<b>Freezing Point/Range (C):</b>	Not Determined
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	0
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Not Determined
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>VOCs (lbs./gallon):</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

## 10. STABILITY AND REACTIVITY

<b>Stability Data:</b>	Stable
<b>Hazardous Polymerization:</b>	Will Not Occur
<b>Conditions to Avoid</b>	None known.
<b>Incompatibility (Materials to Avoid)</b>	Hydrofluoric acid.
<b>Hazardous Decomposition Products</b>	Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C). Oxides of sulfur.
<b>Additional Guidelines</b>	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

### Symptoms related to exposure

#### Acute Toxicity

##### **Inhalation**

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). 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).

##### **Eye Contact**

May cause eye irritation

##### **Skin Contact**

May cause skin irritation.

##### **Ingestion**

None known

### **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
Gypsum	13397-24-5	3000 mg/kg ( Rat )	No data available	No data available
Calcium sulfate	7778-18-9	> 3000 mg/kg (Rat) > 1581 mg/kg (Rat)	No data available	> 3.26 mg/L (Rat, 4h, dust, highest attainable concentration)
Calcium carbonate	471-34-1	6450 mg/kg (Rat) > 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 3 mg/L (Rat) 4h
Crystalline silica, quartz	14808-60-7	> 5000 mg/kg (Rat)	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	Toxicity to Invertebrates
Gypsum	13397-24-5	No information available	No information available	No information available	No information available
Calcium sulfate	7778-18-9	EC50(72h): > 79 mg/L (Pseudokirchnerella subcapitata) EC50(72h): > 2.1 g/L (growth rate) (Pseudokirchnerella subcapitata)	LC50(96h): > 1970 mg/L (Pimephales promelas) LC50(96h) > 79 mg/L (Oryzias latipes) LC50(96h) > 2980 mg/L (Lepomis macrochirus)	EC50(3h): > 1000 mg/L (Activated sludge)	LC50(48h): > 79 mg/L (Daphnia Magna) LC50(48h): 1.533 g/L (Daphnia magna) LC50(48h): > 1970 mg/L (Daphnia magna) LC50 > 1920 mg/L (Ceriodaphnia dubio)
Calcium carbonate	471-34-1	EC50(72h): > 14 mg/L (growth rate) (Desmodesmus subspicatus)	LC50(96h): > 100 mg/L (saturated solution) (Oncorhynchus mykiss)	EC50(3h): > 1000 mg/L (Activated sludge)	EC50(48h): > 100 mg/L (saturated solution) (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

The methods for determining biodegradability are not applicable to inorganic substances.

Substances	CAS Number	Persistence and Degradability
Gypsum	13397-24-5	No information available
Calcium sulfate	7778-18-9	The methods for determining biodegradability are not applicable to inorganic substances.
Calcium carbonate	471-34-1	The methods for determining biodegradability are not applicable to inorganic substances.
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
Gypsum	13397-24-5	No information available
Calcium sulfate	7778-18-9	No information available
Calcium carbonate	471-34-1	No information available
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

No information available

### 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

### 14. TRANSPORT INFORMATION

**US DOT**

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

**US DOT Bulk**

DOT (Bulk) Not applicable

**Canadian TDG ul0**

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

**IATA/ICAO**

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

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

Special Precautions for User: None

**15. REGULATORY INFORMATION****US Regulations**

US TSCA Inventory Product contains one or more components not listed on the inventory.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Acute Health Hazard  
Chronic 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 The California Proposition 65 regulations apply to this product.

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** Crystalline silica

D2A Very Toxic Materials

## **16. OTHER INFORMATION**

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

Not applicable

**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\*\*\***