

## SAFETY DATA SHEET

Product Trade Name:

BaraECD - Internal Olefin

Revision Date: 04-Feb-2015

Revision Number: 3

### 1. Identification

#### 1.1. Product Identifier

Product Trade Name: BaraECD - Internal Olefin  
Synonyms: None  
Chemical Family: Blend  
Internal ID Code: HM007936

#### 1.2 Recommended use and restrictions on use

Application: Mud System  
Uses Advised Against: No information available

#### 1.3 Manufacturer's Name and Contact Details

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

#### 1.4. Emergency telephone number

Emergency Telephone Number (281) 575-5000

### 2. Hazard(s) Identification

#### 2.1 Classification in accordance with paragraph (d) of §1910.1200

#### 2.2. Label Elements

##### Hazard Pictograms



#### Signal Word

Danger

#### Hazard Statements

H317 - May cause an allergic skin reaction  
H350 - May cause cancer by inhalation  
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

**Precautionary Statements**

- Prevention**
  - P201 - Obtain special instructions before use
  - P260 - Do not breathe dust/fume/gas/mist/vapors/spray
  - P270 - Do not eat, drink or smoke when using this product
  - P272 - Contaminated work clothing should not be allowed out of the workplace
- Response**
  - P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
  - P308 + P313 - IF exposed or concerned: Get medical advice/attention
  - P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
- Storage**
  - None
- Disposal**
  - P501 - Dispose of contents/container to an approved incineration plant

**Contains**

Substances	CAS Number	GHS Classification - US
Isomerized alpha olefins	Proprietary	Asp. Tox. 1 (H304)
Alkenes, C16 .alpha.-, isomerized	Proprietary	Asp. Tox. 1 (H304)
Calcium chloride	10043-52-4	Eye Irrit. 2A (H319)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Skin Sens. 1 (H317)
Crystalline silica, quartz	14808-60-7	Carc. 1 (H350) STOT RE 1 (H372)

**2.3 Hazards not otherwise classified**

None known

**3. Composition/information on Ingredients**

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Isomerized alpha olefins	Proprietary	10 - 30%	Asp. Tox. 1 (H304)
Alkenes, C16 .alpha.-, isomerized	Proprietary	10 - 30%	Asp. Tox. 1 (H304)
Calcium chloride	10043-52-4	1 - 5%	Eye Irrit. 2A (H319)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	1 - 5%	Skin Sens. 1 (H317)
Crystalline silica, quartz	14808-60-7	0.1 - 1%	Carc. 1 (H350) STOT RE 1 (H372)

The exact percentage (concentration) of the composition has been withheld as a trade secret. The specific chemical identity of the composition has been withheld as a trade secret.

**4. First-Aid Measures**

**4.1. Description of first aid measures**

- Inhalation**
  - If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.
- Eyes**
  - In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
- Skin**
  - Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

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

#### **4.2 Most important symptoms/effects, acute and delayed**

No information available

#### **4.3. Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically

### **5. Fire-fighting measures**

#### **5.1. Extinguishing media**

##### **Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

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

None known.

#### **5.2 Specific hazards arising from the substance or mixture**

##### **Special Exposure Hazards**

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases.

#### **5.3 Special protective equipment and precautions for fire-fighters**

##### **Special Protective Equipment for Fire-Fighters**

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

### **6. Accidental release measures**

#### **6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas. See Section 8 for additional information

#### **6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

#### **6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

### **7. Handling and storage**

#### **7.1. Precautions for Safe Handling**

##### **Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Avoid breathing mist. Wash hands after use. Launder contaminated clothing before reuse. 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. Material is slippery underfoot.

##### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

#### **7.2. Conditions for safe storage, including any incompatibilities**

##### **Storage Information**

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 36 months.

**8. Exposure Controls/Personal Protection**

**8.1 Occupational Exposure Limits**

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Isomerized alpha olefins	Proprietary	Not applicable	Not applicable
Alkenes, C16 .alpha.-, isomerized	Proprietary	Not applicable	Not applicable
Calcium chloride	10043-52-4	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2	TWA: 0.025 mg/m <sup>3</sup>

**8.2 Appropriate engineering controls**

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

**8.3 Individual protection measures, such as personal protective equipment**

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

**Hand Protection** Impervious rubber gloves.  
**Skin Protection** Rubber apron.  
**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**

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid **Color:** Light to dark yellow  
**Odor:** Hydrocarbon **Odor** No information available  
**Threshold:**

Property	Values
Remarks/ - Method	
<b>pH:</b>	No data available
<b>Freezing Point/Range</b>	No information available.
<b>Melting Point/Range</b>	No data available
<b>Boiling Point/Range</b>	No data available
<b>Flash Point</b>	~ 137 °C / 279 °F (closed cup)
<b>Evaporation rate</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Vapor Density</b>	No data available
<b>Specific Gravity</b>	No data available
<b>Water Solubility</b>	No data available
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available

<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available

**9.2. Other information**

<b>VOC Content (%)</b>	No data available
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**10. Stability and Reactivity**

**10.1. Reactivity**

Not applicable

**10.2. Chemical Stability**

Stable

**10.3. Possibility of Hazardous Reactions**

Will Not Occur

**10.4. Conditions to Avoid**

Keep away from heat, sparks and flame.

**10.5. Incompatible Materials**

Strong oxidizers.

**10.6. Hazardous Decomposition Products**

Oxides of nitrogen. Carbon monoxide and carbon dioxide.

**11. Toxicological Information**

**11.1 Information on likely routes of exposure**

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

**11.2 Symptoms related to the physical, chemical and toxicological characteristics**

**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 skin irritation. 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.

**11.3 Toxicity data**

**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isomerized alpha olefins	Proprietary	> 5050	> 5000 mg/kg	> 2.1 mg/l
Alkenes, C16 .alpha.-, isomerized	Proprietary	No data available	No data available	No data available
Calcium chloride	10043-52-4	> 1000 mg/kg (Rat) 2301 mg/kg (Rat)	2630 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

Substances	CAS Number	Skin corrosion/irritation
Calcium chloride	10043-52-4	Causes mild skin irritation (rabbit)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Non-irritating to the skin
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Calcium chloride	10043-52-4	Irritating to eyes. (rabbit)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Non-irritating to the eye

Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.
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Substances	CAS Number	Skin Sensitization
Calcium chloride	10043-52-4	No data of sufficient quality are available.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Skin sensitizer in guinea pig.
Crystalline silica, quartz	14808-60-7	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Calcium chloride	10043-52-4	No information available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No information available
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	Mutagenic Effects
Calcium chloride	10043-52-4	Did not show mutagenic effects in animal experiments
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	In vivo tests did not show mutagenic effects.
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Calcium chloride	10043-52-4	No information available.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Did not show carcinogenic effects in animal experiments
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.

Substances	CAS Number	Reproductive toxicity
Calcium chloride	10043-52-4	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Animal testing did not show any effects on fertility.
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	STOT - single exposure
Calcium chloride	10043-52-4	No significant toxicity observed in animal studies at concentration requiring classification.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No significant toxicity observed in animal studies at concentration requiring classification.

Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.
<b>Substances</b>	<b>CAS Number</b>	<b>STOT - repeated exposure</b>
Calcium chloride	10043-52-4	No significant toxicity observed in animal studies at concentration requiring classification.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled Lungs

<b>Substances</b>	<b>CAS Number</b>	<b>Aspiration hazard</b>
Calcium chloride	10043-52-4	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable

**12. Ecological Information**

**12.1. Toxicity**  
**Ecotoxicity Effects**

**Product Ecotoxicity Data**  
No data available

**Substance Ecotoxicity Data**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Isomerized alpha olefins	Proprietary	EC50: >1000 mg/l (Skeletonema costatum)	LC50: >1000 mg/l (Cyprinodon variegatus)	No information available	EC50: >1000 mg/l (Mysidopsis bahia)
Alkenes, C16 .alpha.-, isomerized	Proprietary	No information available	No information available	No information available	No information available
Calcium chloride	10043-52-4	EC50(72h): 2900 mg/L (Pseudokirchnerella subcapitata)	LC50(96h): 4630 mg/L (Pimephales promelas)	No information available	EC50(48h): 2400 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
Isomerized alpha olefins	Proprietary	No information available
Alkenes, C16 .alpha.-, isomerized	Proprietary	No information available
Calcium chloride	10043-52-4	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
Isomerized alpha olefins	Proprietary	> 4
Alkenes, C16 .alpha.-, isomerized	Proprietary	No information available
Calcium chloride	10043-52-4	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

Substances	Mobility
Calcium chloride	No information available
Crystalline silica, quartz	No information available

**12.6. Other adverse effects**

No information available

**13. Disposal Considerations**

**13.1. Waste treatment methods**

**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**

**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 u10**

**UN Proper Shipping Name:** Not restricted  
**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

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

## 16. Other information, including date of preparation or last revision

### Preparation Information

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

**Revision Date:** 04-Feb-2015

**Reason for Revision** 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.

### **Key or legend to abbreviations and acronyms**

Not applicable

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

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**End of Safety Data Sheet**