

## SAFETY DATA SHEET

Product Trade Name: BARAKLEAN® FL

Revision Date: 12-Mar-2015

Revision Number: 11

### 1. Identification

#### 1.1. Product Identifier

Product Trade Name: BARAKLEAN® FL  
Synonyms: None  
Chemical Family: Blend  
Internal ID Code: HM003511

#### 1.2 Recommended use and restrictions on use

Application: Surfactant  
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 Stewardship  
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

Skin Corrosion / Irritation	Category 2 - (H315)
Serious Eye Damage / Eye Irritation	Category 2A - (H319)
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - (H335)
Acute Aquatic Toxicity	Acute 3 - (H402)
Flammable Liquids.	Category 4 - (H227)

#### 2.2. Label Elements

##### Hazard Pictograms



<b>Signal Word</b>	Warning
<b>Hazard Statements</b>	H227 - Combustible liquid H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation H402 - Harmful to aquatic life
<b>Precautionary Statements</b>	
<b>Prevention</b>	P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking P261 - Avoid breathing dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P271 - Use only outdoors or in a well-ventilated area P273 - Avoid release to the environment P280 - Wear protective gloves/protective clothing/eye protection/face protection
<b>Response</b>	P302 + P352 - IF ON SKIN: Wash with plenty of soap and water P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P312 - Call a POISON CENTER or doctor/physician if you feel unwell P332 + P313 - If skin irritation occurs: Get medical advice/attention P337 + P313 - If eye irritation persists: Get medical advice/attention P362 - Take off contaminated clothing and wash before reuse P370 + P378 - In case of fire: Use water spray for extinction
<b>Storage</b>	P403 + P235 - Store in a well-ventilated place. Keep cool P405 - Store locked up
<b>Disposal</b>	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

<b>Contains Substances</b>	<b>CAS Number</b>
2-Ethyl hexanol	104-76-7

**2.3 Hazards not otherwise classified**  
None known

<b>3. Composition/information on Ingredients</b>			
<b>Substances</b>	<b>CAS Number</b>	<b>PERCENT (w/w)</b>	<b>GHS Classification - US</b>
2-Ethyl hexanol	104-76-7	30 - 60%	Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) STOT SE 3 (H335) Aquatic Acute 3 (H402) Flam. Liq. 4 (H227)

The exact percentage (concentration) of the composition has been withheld as proprietary.

## 4. First-Aid Measures

### 4.1. Description of first aid measures

<b>Inhalation</b>	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
<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>Skin</b>	Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes
<b>Ingestion</b>	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

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

Causes skin irritation. Causes severe eye irritation May cause respiratory irritation.

### 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. 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.  
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. 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.

#### 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
2-Ethyl hexanol	104-76-7	Not applicable	TWA: 50 ppm

**8.2 Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

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

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:  
Organic vapor respirator.

**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 straw  
**Odor:** Musty      **Odor** No information available  
**Threshold:**

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
<b>pH:</b>	6-8
<b>Freezing Point/Range</b>	< -15 °C / < 5 °F
<b>Melting Point/Range</b>	No data available
<b>Boiling Point/Range</b>	184 °C / 363 °F
<b>Flash Point</b>	74 °C / 165 °F Tag Closed Cup (TCC)
<b>Flammability (solid, gas)</b>	No data available
upper flammability limit	9.7%
lower flammability limit	0.88%
<b>Evaporation rate</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Vapor Density</b>	4.5
<b>Specific Gravity</b>	0.9
<b>Water Solubility</b>	Emulsifies
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	> 4
<b>Autoignition Temperature</b>	288 °C / 550 °F
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available

**Oxidizing Properties**

No information available

**9.2. Other information****VOC Content (%)**

No data available

**10. Stability and Reactivity****10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical Stability**

Stable

**10.3. Possibility of Hazardous Reactions**

Will Not Occur

**10.4. Conditions to Avoid**

None anticipated

**10.5. Incompatible Materials**

Strong oxidizers.

**10.6. Hazardous Decomposition Products**

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**

Vapors given off by heated product may be harmful. May cause respiratory irritation.

**Eye Contact**

May cause eye irritation.

**Skin Contact**

May cause skin irritation.

**Ingestion**

Irritation of the mouth, throat, and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.**11.3 Toxicity data****Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-Ethyl hexanol	104-76-7	> 2000 mg/kg	1980 mg/kg	1.45 mg/L (Rat) 4h

Substances	CAS Number	Skin corrosion/irritation
2-Ethyl hexanol	104-76-7	Causes moderate skin irritation. (Rabbit)

Substances	CAS Number	Eye damage/irritation
2-Ethyl hexanol	104-76-7	Causes moderate eye irritation. (Rabbit)

Substances	CAS Number	Skin Sensitization
2-Ethyl hexanol	104-76-7	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
2-Ethyl hexanol	104-76-7	Not regarded as a sensitizer.

Substances	CAS Number	Mutagenic Effects
2-Ethyl hexanol	104-76-7	In vitro tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
2-Ethyl hexanol	104-76-7	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
2-Ethyl hexanol	104-76-7	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
2-Ethyl hexanol	104-76-7	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
2-Ethyl hexanol	104-76-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
2-Ethyl hexanol	104-76-7	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
2-Ethyl hexanol	104-76-7	No information available	LC50 (96h) 17.1 mg/L (Leuciscus idus melanotus)	No information available	No information available

### 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
2-Ethyl hexanol	104-76-7	Readily biodegradable (100 @ 14d)

### 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
2-Ethyl hexanol	104-76-7	2.73 BCF = 25.33

### 12.4. Mobility in soil

Substances	CAS Number	Mobility
2-Ethyl hexanol	104-76-7	KOC = 26

### 12.5 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  
**Environmental Hazards:** Not applicable

#### US DOT Bulk

**DOT (Bulk)** NA1993, Combustible Liquid, N.O.S., Combustible Liquid, III  
 (Contains 2-Ethylhexanol)

#### Canadian TDG

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** 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  
**Environmental Hazards:** 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** All components listed on inventory or are exempt.

**EPA SARA Title III Extremely Hazardous Substances** Not applicable

<b>EPA SARA (311,312) Hazard Class</b>	Acute Health Hazard Fire 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>	All components listed do not apply to the California Proposition 65 Regulation.
<b>MA Right-to-Know Law</b>	One or more components listed.
<b>NJ Right-to-Know Law</b>	Does not apply.
<b>PA Right-to-Know Law</b>	One or more components listed.

## Canadian Regulations

**Canadian DSL Inventory** All components listed on inventory or are exempt.

## 16. Other information

### Preparation Information

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

**Revision Date:** 12-Mar-2015

**Reason for Revision** Update to Format  
SECTION:  
2

### **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 Stewardship at 1-580-251-4335.

**Key or legend to abbreviations and acronyms**

bw – body weight  
CAS – Chemical Abstracts Service  
EC50 – Effective Concentration 50%  
ErC50 – Effective Concentration growth rate 50%  
LC50 – Lethal Concentration 50%  
LD50 – Lethal Dose 50%  
LL50 – Lethal Loading 50%  
mg/kg – milligram/kilogram  
mg/L – milligram/liter  
NIOSH – National Institute for Occupational Safety and Health  
NTP – National Toxicology Program  
OEL – Occupational Exposure Limit  
PEL – Permissible Exposure Limit  
ppm – parts per million  
STEL – Short Term Exposure Limit  
TWA – Time-Weighted Average  
UN – United Nations  
h - hour  
mg/m<sup>3</sup> - milligram/cubic meter  
mm - millimeter  
mmHg - millimeter mercury  
w/w - weight/weight  
d - day

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)  
OSHA  
ECHA C&L

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**End of Safety Data Sheet**