

## EnerLoc

### SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	EnerLoc
<b>Other Means of Identification</b>	Fluid Loss Control
<b>Recommended Use</b>	Drilling Fluid Additive.
<b>Manufacturer / Supplier</b>	AES Drilling Fluids, LLC, 11767 Katy Freeway, Suite 230, Houston, TX, 77079, Sales & Information, 281-556-5628
<b>Emergency Phone No.</b>	CHEMTREC, 1-800-424-9300, 24-hour Emergency
<b>Date of Preparation</b>	April 08, 2015

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Carcinogenicity - Category 1A; Specific target organ toxicity (repeated exposure) - Category 2  
OSHA Defined Hazards: Combustible dust

#### GHS Label Elements



Signal Word:

Danger

Hazard Statement(s):

Harmful if inhaled.

Causes damage to organs through prolonged or repeated exposure.

May cause cancer.

May form combustible dust concentrations in air

Precautionary Statement(s):

Prevention:

Do not handle until all safety precautions have been read and understood.

Avoid breathing dust.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF exposed or concerned: Get medical advice/attention.

Storage:

#### Other Hazards

POTENTIAL HEALTH EFFECTS:

EYE: Dust in eye may result in mechanical irritation.

SKIN: May cause mild irritation.

INGESTION: May be irritating to mouth throat and stomach.

INHALATION: May result in irritation of mucous membranes.

---

Product Identifier: EnerLoc

Date of Preparation: April 08, 2015

Page 01 of 06

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Cellulose Blend	9004-34-6	50-70	
Carbon Based Material	CBI*	10-20	
Trade Secret	CBI*	10-20	
Silica, quartz	14808-60-7	<1.0	

### Notes

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

CBI = Confidential Business Information.

## SECTION 4. FIRST-AID MEASURES

### First-aid Measures

#### Inhalation

Move to fresh air. Get medical advice/attention if you feel unwell or are concerned.

#### Skin Contact

Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. If irritation persists, get medical advice/attention.

#### Eye Contact

Flush eyes thoroughly with lukewarm water for 15 minutes. If eye irritation persists, get medical advice/attention.

#### Ingestion

Rinse mouth with water. Call a Poison Centre or doctor if you feel unwell or are concerned.

## SECTION 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Water, Foam, Dry chemical, Carbon Dioxide.

### Specific Hazards Arising from the Chemical

At very high dust concentrations, product may form combustible dust concentrations or explosive dust-air mixtures. Oxides of carbon.

### Special Protective Equipment and Precautions for Fire-fighters

When fighting chemical fires, emergency responders should wear NIOSH approved self contained breathing apparatus and appropriate protective clothing.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment, and Emergency Procedures

See Section 8 for appropriate personal protective equipment.

### Environmental Precautions

It is good practice to prevent releases into the environment.

### Methods and Materials for Containment and Cleaning Up

Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal. Avoid dry sweeping. If necessary, use a dust suppressant such as water. Do not use compressed air for clean-up. Containerize for solid waste disposal. Clean up residual contamination with water and place in appropriate containers for disposal. Dispose of according to local, state and federal regulations.

## SECTION 7. HANDLING AND STORAGE

Product Identifier: EnerLoc

Date of Preparation: April 08, 2015

Page 02 of 06

### Precautions for Safe Handling

Avoid skin and eye contact. Avoid breathing in dust. Only use where there is adequate ventilation. See Section 8 for appropriate Personal Protective Equipment (PPE). Wash hands thoroughly after handling this material. Avoid creating excessive dust while handling the product.

### Conditions for Safe Storage

STORAGE: Keep in closed containers in cool, dry, well ventilated area. Use good housekeeping to prevent accumulation of dust.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH® TLV®		OSHA PEL		AIHA® WEEL™	
	TWA	STEL [C]	TWA	Ceiling	8-hr TWA	Short-term TWA [C]
Cellulose Blend	10 mg/m <sup>3</sup> (R)	Not established	5 mg/m <sup>3</sup> (R)	Not established	Not established	Not established
Carbon Based Material	3 mg/m <sup>3</sup> (R) A3		5 mg/m <sup>3</sup> (R)		Not established	
Trade Secret	Not established		Not established		Not established	
Silica, quartz	0.025 mg/m <sup>3</sup> A2		0.1 mg/m <sup>3</sup>		Not established	

ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. C = Ceiling limit. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. AIHA® = AIHA® Guideline Foundation. WEEL™ = Workplace Environmental Exposure Limit. R = Respirable fraction. Control parameter values for respirable dust.

### Appropriate Engineering Controls

Use a local exhaust ventilation and enclosure, if necessary, to control amount in the air. Do not allow product to accumulate in the air in work or storage areas, or in confined spaces.

### Individual Protection Measures

#### Eye/Face Protection

Wear chemical safety goggles.

#### Skin Protection

Wear appropriate gloves while handling product. Do not use gloves or protective clothing made of polyvinyl alcohol (PVA).

#### Respiratory Protection

If conditions of use promote large amounts of dust to gather in the work area, wear NIOSH approved dust mask or respirator.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

Appearance	Black crystalline.
Odour	Faint
pH	Not available
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	Not available
Flash Point	Not available
Evaporation Rate	Not available
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)

Product Identifier: EnerLoc

Date of Preparation: April 08, 2015

Page 03 of 06

<b>Vapour Pressure</b>	Not available
<b>Vapour Density (air = 1)</b>	Not available
<b>Relative Density (water = 1)</b>	1.43
<b>Solubility</b>	Insoluble in water
<b>Auto-ignition Temperature</b>	Not available
<b>Decomposition Temperature</b>	Not available
<b>Other Information</b>	
<b>Physical State</b>	Solid

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions of use.

### Chemical Stability

Stable under normal conditions.

### Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

### Conditions to Avoid

Strong oxidizers.

### Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid).

### Hazardous Decomposition Products

Oxides of carbon.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

### Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Cellulose Blend	> 5800 mg/m <sup>3</sup> (rat) (4-hour exposure)	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)
Carbon Based Material	Not available	Not available	Not available
Trade Secret	Not available	Not available	Not available
Silica, quartz	Not available	500 mg/kg (rat)	Not available

### Skin Corrosion/Irritation

May cause skin irritation.

### Serious Eye Damage/Irritation

May cause mechanical irritation to eyes.

### STOT (Specific Target Organ Toxicity) - Single Exposure

#### Inhalation

High dust levels may cause irritation of the respiratory tract, including sneezing and coughing.

#### Skin Absorption

No information was located.

#### Ingestion

May cause irritation of the mouth, throat and stomach.

### STOT (Specific Target Organ Toxicity) - Repeated Exposure

This product may contain trace amounts of crystalline silica (quartz). Long term exposure to respirable crystalline silica

Product Identifier: EnerLoc

Date of Preparation: April 08, 2015

Page 04 of 06

dust over the TLV may lead to the development of silicosis or other respiratory problems. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function.

#### **Respiratory and/or Skin Sensitization**

Not known to be a respiratory sensitizer. Not known to be a skin sensitizer.

#### **Carcinogenicity**

<b>Chemical Name</b>	<b>IARC</b>	<b>ACGIH®</b>	<b>NTP</b>	<b>OSHA</b>
Cellulose Blend	Not Listed	Not Listed	Not Listed	Not Listed
Carbon Based Material	Group 2B	A3	Not Listed	Not Listed
Trade Secret	Not Listed	Not Listed	Not Listed	Not Listed
Silica, quartz	Group 1	A2	Known carcinogen	Not Listed

This product may contain trace amounts of crystalline silica which the International Agency for Research on Cancer (IARC) has listed as Group 1 - Carcinogenic to humans.

#### **Key to Abbreviations**

IARC = International Agency for Research on Cancer. Group 1 = Carcinogenic to humans. Group 2B = Possibly carcinogenic to humans. ACGIH® = American Conference of Governmental Industrial Hygienists. A2 = Suspected human carcinogen. A3 = Animal carcinogen. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration.

#### **Reproductive Toxicity**

##### **Development of Offspring**

No information was located.

##### **Sexual Function and Fertility**

No information was located.

#### **Germ Cell Mutagenicity**

No information was located.

## **SECTION 12. ECOLOGICAL INFORMATION**

Environmental information was not located.

#### **Toxicity**

No information was located.

##### **Acute Aquatic Toxicity**

<b>Chemical Name</b>	<b>LC50 Fish</b>	<b>EC50 Crustacea</b>	<b>ErC50 Aquatic Plants</b>	<b>ErC50 Algae</b>
Cellulose Blend	Not available	Not available	Not available	Not available
Carbon Based Material	Not available	Not available	Not available	Not available
Trade Secret	Not available	Not available	Not available	Not available
Silica, quartz	Not available	Not available	Not available	Not available

#### **Persistence and Degradability**

No information was located.

#### **Bioaccumulative Potential**

No information was located.

#### **Mobility in Soil**

No information was located.

## **SECTION 13. DISPOSAL CONSIDERATIONS**

#### **Disposal Methods**

Dispose of in accordance with all local, state and federal regulations.  
Not classified as RCRA Hazardous.

Product Identifier: EnerLoc

Date of Preparation: April 08, 2015

Page 05 of 06

RCRA WASTE NUMBER: Not Applicable.

## SECTION 14. TRANSPORT INFORMATION

Not regulated under US DOT Regulations.

**Environmental Hazards** Not applicable

## SECTION 15. REGULATORY INFORMATION

**Safety, Health and Environmental Regulations**

**USA**

**Toxic Substances Control Act (TSCA) Section 8(b)**

All ingredients are listed on the TSCA Inventory.

**Additional USA Regulatory Lists**

Product does not contain any chemicals subject to the reporting requirement of CERCLA.

SARA Title III - Section 302: No listed components.

SARA Title III - Section 311/312: Chronic Health Hazard.

SARA Title III - Section 313: No listed components.

## SECTION 16. OTHER INFORMATION

**NFPA Rating**                      **Health - 1**    **Flammability - 1**                      **Instability - 0**

**SDS Prepared By**                      AES Drilling Fluids

**Phone No.**                                      281-556-5628

**Date of Preparation**                      April 08, 2015

**Disclaimer**                      Do not handle or use until precautions on MSDS are read and understood. The information on this form is furnished solely for the purpose of enabling those who transport, handle or use our products to ensure the safety and health of their employees and to comply with various laws and regulations (federal, state and local). We believe the statements, technical information and recommendations contained herein are reliable but, they are given without warranty or guarantee of any kind, express or implied and we assume no responsibility for any loss, damage, direct or consequential, arising out of their use.

---

Product Identifier:                      EnerLoc

Date of Preparation:                      April 08, 2015

Page 06 of 06