

## LIGNITE

### SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	LIGNITE
<b>Other Means of Identification</b>	Clay Stabilizer
<b>Recommended Use</b>	Drilling Fluid Additive.
<b>Manufacturer/Supplier Identifier</b>	AES Drilling Fluids, LLC, 11767 Katy Freeway, Suite 230, Houston, TX, 77079, Sales & Information, 281-556-5628
<b>Emergency Phone No.</b>	AES Drilling Fluids, LLC, 1-888-556-4533
<b>Date of Preparation</b>	August 19, 2015

### SECTION 2. HAZARD IDENTIFICATION

Classified according to the US Hazard Communication Standard (HCS 2012).

**Classification**

Combustible dust - Category 1; Carcinogenicity - Category 1B

**Label Elements**



Hazard Statement(s):  
May form combustible dust concentrations in air.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance:

Chemical Name	CAS No.	%	Other Identifiers
Coal, brown, sulfonated, sodium salt	68525-81-5	100	
Silica, quartz	14808-60-7	1 - 6	

### SECTION 4. FIRST-AID MEASURES

**First-aid Measures**

**Inhalation**

Remove source of exposure or move to fresh air. Get medical advice or 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. Get medical advice or attention if you feel unwell or are concerned.

**Eye Contact**

Rinse the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes, while holding the eyelid(s) open.

If eye irritation persists, get medical advice or attention.

#### **Ingestion**

Rinse mouth with water. Get medical advice or attention if you feel unwell or are concerned.

## **SECTION 5. FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

#### **Suitable Extinguishing Media**

Not combustible. Use extinguishing agent suitable for surrounding fire. Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

#### **Unsuitable Extinguishing Media**

None known.

### **Specific Hazards Arising from the Product**

None known.

In a fire, the following hazardous materials may be generated: Oxides of carbon. Calcium oxide.

### **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**

Keep out unnecessary and unprotected personnel. Ensure adequate ventilation in area. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Remove or isolate incompatible materials as well as other hazardous materials.

### **Environmental Precautions**

It is good practice to prevent releases into the environment.

### **Methods and Materials for Containment and Cleaning Up**

Avoid generating dust. Avoid dry sweeping. If necessary, use a dust suppressant such as water. Do not use compressed air for clean-up. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal. Store recovered product or absorbent material in suitable containers for disposal according to local regulations.

### **Other Information**

Contact EH&S regarding spill as spills of certain products and certain quantities may require reporting to various authorities.

## **SECTION 7. HANDLING AND STORAGE**

### **Precautions for Safe Handling**

Avoid breathing in this product. Avoid contact with eyes, skin and clothing. Avoid creating excessive dust while handling the product. Do not eat, drink or smoke in areas where product is handled. Employees should wash hands after working with product and before going on breaks outside of the work area.

### **Conditions for Safe Storage**

Store in an area that is: dry, cool, well-ventilated. Away from open flames, excessive heat or sources of ignition. Separate from incompatible materials keep containers tightly closed when not in use. Use good housekeeping to prevent accumulation of dust.

## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **Control Parameters**

Chemical Name	ACGIH® TLV®		Alberta		SASK	
	TWA	STEL [C]	OEL	STEL	OEL	STEL

Product Identifier: LIGNITE

Date of Preparation: August 19, 2015

Page 02 of 06

Silica, quartz	0.025 mg/m3 A2	Not established	0.025 mg/m3	Not established	0.05 mg/m3	Not established
Coal, brown, sulfonated, sodium salt	Not established		Not established		Not established	

ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. STEL = Short-term Exposure Limit. C = Ceiling limit. OEL = Occupational Exposure Limit r = Respirable fraction. Product may cause irritation similar to nuisance dust and meet the criteria of Particulates Not Otherwise Specified, respirable particles. or inhalable particles.

#### Appropriate Engineering Controls

Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air.

#### Individual Protection Measures

##### Eye/Face Protection

Safety glasses with side shields are recommended to prevent eye contact. Use goggles or face shield when there is risk of eye contact or visible dust produced.

##### Skin Protection

Wear gloves with appropriate chemical resistance, see manufacturers specifications for suitability. Wear long sleeves, long pants and appropriate footwear while working with product.

##### 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

<b>Appearance</b>	Brown - black powder.
<b>Odour</b>	Not available
<b>Odour Threshold</b>	Not available
<b>pH</b>	Not available
<b>Melting Point/Freezing Point</b>	Not available (melting); Not available (freezing)
<b>Initial Boiling Point/Range</b>	Not available
<b>Flash Point</b>	Not available
<b>Evaporation Rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not available
<b>Upper/Lower Flammability or Explosive Limit</b>	Not available (upper); Not available (lower)
<b>Vapour Pressure</b>	Not available
<b>Vapour Density (air = 1)</b>	Not available
<b>Relative Density (water = 1)</b>	Not available
<b>Solubility</b>	Not available in water
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not available
<b>Auto-ignition Temperature</b>	968 °F (520 °C)
<b>Decomposition Temperature</b>	Not available
<b>Viscosity</b>	Not available (kinematic); Not available (dynamic)
<b>Other Information</b>	
<b>Physical State</b>	Solid

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

No reactivity test data was located.

**Chemical Stability**

Stable under normal conditions.

**Possibility of Hazardous Reactions**

None expected under normal conditions of storage and use.

**Conditions to Avoid**

Heat. Sparks, open flames.

**Incompatible Materials**

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

**Hazardous Decomposition Products**

Oxides of sulphur. Carbon Monoxide. Carbon Monoxide and Carbon Dioxide may form on combustion. Low molecular weight hydrocarbons.

**SECTION 11. TOXICOLOGICAL INFORMATION****Likely Routes of Exposure**

Inhalation; skin contact; eye contact; ingestion.

**Acute Toxicity**

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Silica, quartz	Not available	500 mg/kg (rat)	Not available
Coal, brown, sulfonated, sodium salt	Not available	Not available	Not available

**Skin Corrosion/Irritation**

No information was located.

**Serious Eye Damage/Irritation**

No information was located.

**STOT (Specific Target Organ Toxicity) - Single Exposure****Inhalation**

No information was located.

**Ingestion**

No information was located.

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

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

No information was located.

**Carcinogenicity**

Chemical Name	IARC	ACGIH®	NTP	OSHA
Silica, quartz	Group 1	A2	Known carcinogen	Not Listed
Coal, brown, sulfonated, sodium salt	Not Listed	Not Listed	Not Listed	Not Listed

This product may contain trace amounts of crystalline silica which the International Agency for Research on Cancer (IARC) has listed as causing cancer in humans.

**Key to Abbreviations**

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

Product Identifier: LIGNITE

Date of Preparation: August 19, 2015

Page 04 of 06

**Reproductive Toxicity****Development of Offspring**

No information was located.

**Sexual Function and Fertility**

No information was located.

**Effects on or via Lactation**

No information was located.

**Germ Cell Mutagenicity**

No information was located.

**SECTION 12. ECOLOGICAL INFORMATION**

Environmental information was not located.

**Ecotoxicity**

No information was located.

**Acute Aquatic Toxicity**

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Silica, quartz	Not available	Not available	Not available	Not available
Coal, brown, sulfonated, sodium salt	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 unused product in accordance with local environmental and public health regulations.

**SECTION 14. TRANSPORT INFORMATION**

Not regulated under Canadian TDG regulations. Not regulated under US DOT Regulations.

**SECTION 15. REGULATORY INFORMATION****Safety, Health and Environmental Regulations****Canada****Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)**

All ingredients are listed on the DSL or are not required to be listed.

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

All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

**Additional USA Regulatory Lists**

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

Fire Hazard

SARA Title III - Section 302: Listed.

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

Product Identifier: LIGNITE

Date of Preparation: August 19, 2015

Page 05 of 06

## SECTION 16. OTHER INFORMATION

**NFPA Rating**                      **Health - 1**    **Flammability - 2**                      **Instability - 0**

**SDS Prepared By**                      HSE Department

**Phone No.**                                      403-269-2800

**Date of Preparation**                      August 19, 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.