

Ener Pac Regular

SECTION 1. IDENTIFICATION

Product Identifier Ener Pac Regular
Recommended Use Drilling Fluid Additive.
Manufacturer / Supplier AES Drilling Fluids, LLC, 11767 Katy Freeway, Suite 230, Houston, TX, 77079, Sales & Information, 281-556-5628
Emergency Phone No. CHEMTREC, 1-800-424-9300, 24-hour Emergency
Date of Preparation May 15, 2015

SECTION 2. HAZARDS IDENTIFICATION

GHS Label Elements

Hazard Statement(s):

H402 Harmful to aquatic life.

Precautionary Statement(s):

P273 Avoid release to the environment.

P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance:

| Chemical Name | CAS No. | % | Other Identifiers |
|-----------------------------|-----------|-----|-------------------|
| Polyanionic Cellulose (PAC) | 9004-32-4 | 100 | |

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Call a Poison Centre or doctor if you feel unwell or are concerned.

Skin Contact

Wash gently and thoroughly with lukewarm, gently flowing water and mild soap. Remove contaminated clothing and laundry before reuse. Get medical advice/attention if you feel unwell or are concerned.

Eye Contact

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

Ingestion

Rinse mouth with water. Do not induce vomiting without medical advice. If vomiting occurs, have victim lean forward to reduce the risk of aspiration. Call a Poison Centre or doctor if you feel unwell or are concerned.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water, Carbon Dioxide, Dry chemical. Alcohol-resistant foams.

Specific Hazards Arising from the Chemical

Product can ignite if strongly heated and exposed to open flames.
Thermal decomposition of this product may lead to the release of irritating gases and vapours. 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

Keep out unnecessary and unprotected personnel. Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the product enters drains, soil, ditches, sewers, waterways and/or groundwater inform EH&S and appropriate authorities.

Methods and Materials for Containment and Cleaning Up

Eliminate all ignition sources. Vacuum or sweep product up, try to minimize dust build-up. Place solid waste in a sealed container for disposal in accordance with local environmental and public health regulations.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid breathing in this product. Only use where there is adequate ventilation. Do not get in eyes, on skin or on clothing. 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. Remove and wash contaminated clothing before re-use. See Section 8 for appropriate Personal Protective Equipment (PPE).

Conditions for Safe Storage

Store in an area that is: cool, dry, well-ventilated. Away from open flames, excessive heat or sources of ignition. 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® | | OSHA PEL | | AIHA® WEEL™ | |
|-----------------------------|-----------------|----------|-----------------|---------|-----------------|--------------------|
| | TWA | STEL [C] | TWA | Ceiling | 8-hr TWA | Short-term TWA [C] |
| Polyanionic Cellulose (PAC) | Not established | | Not established | | 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.

Appropriate Engineering Controls

Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. While working with the product an eyewash and safety shower should be within acceptable distance to the work area.

Individual Protection Measures

Eye/Face Protection

Safety glasses or goggles. Use goggles or face shield when there is risk of eye contact or visible dust produced.

Skin Protection

Wear appropriate gloves while handling product. 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

| | |
|--|---|
| Appearance | Light yellow powder. |
| Odour | Not available |
| Odour Threshold | Not available |
| pH | 6.5 - 8.5 |
| Melting Point/Freezing Point | 525 °F (274 °C) (melting); 525 °F (274 °C) (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) |
| Vapour Pressure | Not available |
| Vapour Density (air = 1) | Not available |
| Relative Density (water = 1) | Not available |
| Solubility | Not available in water |
| Auto-ignition Temperature | Not available |
| Decomposition Temperature | Not available |
| Other Information | |
| Physical State | 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

Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials

Strong Oxidizing Agents.

Hazardous Decomposition Products

Carbon oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

| Chemical Name | LC50 | LD50 (oral) | LD50 (dermal) |
|-----------------------------|--------------------------------------|-------------------|-----------------------|
| Polyanionic Cellulose (PAC) | > 5800 mg/m3 (rat) (4-hour exposure) | 27000 mg/kg (rat) | > 2000 mg/kg (rabbit) |

Skin Corrosion/Irritation

Product Identifier: Ener Pac Regular

Date of Preparation: May 15, 2015

Page 03 of 05

May cause skin irritation.

Serious Eye Damage/Irritation

May cause eye irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause irritation. May be harmful if inhaled.

Skin Absorption

No information was located.

Ingestion

May cause irritation of the digestive tract.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

Respiratory and/or Skin Sensitization

No information was located.

Carcinogenicity

| Chemical Name | IARC | ACGIH® | NTP | OSHA |
|-----------------------------|------------|------------|------------|------------|
| Polyanionic Cellulose (PAC) | Not Listed | Not Listed | Not Listed | Not Listed |

No information was located.

Key to Abbreviations

IARC = International Agency for Research on Cancer. ACGIH® = American Conference of Governmental Industrial Hygienists. 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.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

No information was located.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

Environmental information was not located.

Toxicity

No information was located.

Acute Aquatic Toxicity

| Chemical Name | LC50 Fish | EC50 Crustacea | ErC50 Aquatic Plants | ErC50 Algae |
|-----------------------------|--|--|----------------------|---------------|
| Polyanionic Cellulose (PAC) | 100-1000 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour) | 87.26 mg/L (Daphnia magna (water flea); 48-hour) | Not available | Not available |

Persistence and Degradability

No information was located.

Bioaccumulative Potential

Product Identifier: Ener Pac Regular

Date of Preparation: May 15, 2015

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. RCRA WASTE NUMBER: Not Applicable.

SECTION 14. TRANSPORT INFORMATION

Not regulated under US DOT Regulations.

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

USA

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

All ingredients are on the TSCA Inventory or exempt from the TSCA.

Additional USA Regulatory Lists

CERCLA: 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: None

SARA Title III - Section 313: No chemicals are reportable under Section 313.

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 May 15, 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.