

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **HR-4E**

**Revision Date:** 04-Jan-2011

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** HR-4E  
**Synonyms:** None  
**Chemical Family:** Lignosulfonate  
**Application:** Cement Retarder  
**Manufacturer/Supplier:** Halliburton Energy Services  
P.O. Box 1431  
Duncan, Oklahoma 73536-0431  
Emergency Telephone: (281) 575-5000  
**Prepared By:** Chemical Compliance  
Telephone: 1-580-251-4335  
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances              | CAS Number | PERCENT   | ACGIH TLV-TWA  | OSHA PEL-TWA   |
|-------------------------|------------|-----------|----------------|----------------|
| Modified lignosulfonate |            | 60 - 100% | Not applicable | Not applicable |

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye and respiratory irritation. Airborne dust may be explosive.

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

|                                         |                |
|-----------------------------------------|----------------|
| Flash Point/Range (F):                  | Not Determined |
| Flash Point/Range (C):                  | Not Determined |
| Flash Point Method:                     | Not Determined |
| Autoignition Temperature (F):           | Not Determined |
| Autoignition Temperature (C):           | Not Determined |
| Flammability Limits in Air - Lower (%): | Not Determined |
| Flammability Limits in Air - Upper (%): | Not Determined |

**Fire Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**NFPA Ratings:** Health 1, Flammability 1, Reactivity 0  
**HMS Ratings:** Health 1, Flammability 1, Reactivity 0

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

**Storage Information** Store away from oxidizers. Store in a cool, dry location.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

**Respiratory Protection** Not normally necessary.

**Hand Protection** Normal work gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                 |          |
|-----------------|----------|
| Physical State: | Solid    |
| Color:          | Brown    |
| Odor:           | Odorless |
| pH:             | 9 - 10.3 |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                             |                |
|---------------------------------------------|----------------|
| Specific Gravity @ 20 C (Water=1):          | 1.20 - 1.30    |
| Density @ 20 C (lbs./gallon):               | Not Determined |
| Bulk Density @ 20 C (lbs/ft3):              | 30 - 40        |
| Boiling Point/Range (F):                    | Not Determined |
| Boiling Point/Range (C):                    | Not Determined |
| Freezing Point/Range (F):                   | Not Determined |
| Freezing Point/Range (C):                   | Not Determined |
| Vapor Pressure @ 20 C (mmHg):               | Not Determined |
| Vapor Density (Air=1):                      | Not Determined |
| Percent Volatiles:                          | Not Determined |
| Evaporation Rate (Butyl Acetate=1):         | Not Determined |
| Solubility in Water (g/100ml):              | Soluble        |
| Solubility in Solvents (g/100ml):           | Not Determined |
| VOCs (lbs./gallon):                         | Not Determined |
| Viscosity, Dynamic @ 20 C (centipoise):     | Not Determined |
| Viscosity, Kinematic @ 20 C (centistrokes): | Not Determined |
| Partition Coefficient/n-Octanol/Water:      | Not Determined |
| Molecular Weight (g/mole):                  | Not Determined |

## 10. STABILITY AND REACTIVITY

|                                      |                                                       |
|--------------------------------------|-------------------------------------------------------|
| Stability Data:                      | Stable                                                |
| Hazardous Polymerization:            | Will Not Occur                                        |
| Conditions to Avoid                  | None anticipated                                      |
| Incompatibility (Materials to Avoid) | Strong oxidizers.                                     |
| Hazardous Decomposition Products     | Oxides of sulfur. Carbon monoxide and carbon dioxide. |
| Additional Guidelines                | Not Applicable                                        |

## 11. TOXICOLOGICAL INFORMATION

|                                 |                                                                                                            |
|---------------------------------|------------------------------------------------------------------------------------------------------------|
| Principle Route of Exposure     | Eye or skin contact, inhalation.                                                                           |
| Inhalation                      | May cause respiratory irritation.                                                                          |
| Skin Contact                    | None known.                                                                                                |
| Eye Contact                     | May cause mild eye irritation.                                                                             |
| Ingestion                       | None known                                                                                                 |
| Aggravated Medical Conditions   | None known.                                                                                                |
| Chronic Effects/Carcinogenicity | No data available to indicate product or components present at greater than 1% are chronic health hazards. |
| Other Information               | None known.                                                                                                |
| Toxicity Tests                  |                                                                                                            |
| Oral Toxicity:                  | LD50: > 15000 mg/kg (Rat)                                                                                  |
| Dermal Toxicity:                | Not determined                                                                                             |
| Inhalation Toxicity:            | Not determined                                                                                             |

|                                                   |                |
|---------------------------------------------------|----------------|
| <b>Primary Irritation Effect:</b>                 | Not determined |
| <b>Carcinogenicity</b>                            | Not determined |
| <b>Genotoxicity:</b>                              | Not determined |
| <b>Reproductive /<br/>Developmental Toxicity:</b> | Not determined |

## 12. ECOLOGICAL INFORMATION

|                                  |                |
|----------------------------------|----------------|
| <b>Mobility (Water/Soil/Air)</b> | Not determined |
| <b>Persistence/Degradability</b> | Biodegradable  |
| <b>Bio-accumulation</b>          | Not determined |

### Ecotoxicological Information

|                                    |                                     |
|------------------------------------|-------------------------------------|
| <b>Acute Fish Toxicity:</b>        | Not determined                      |
| <b>Acute Crustaceans Toxicity:</b> | TLM96: > 1000 ppm (Crangon crangon) |
| <b>Acute Algae Toxicity:</b>       | Not determined                      |

|                                  |                |
|----------------------------------|----------------|
| <b>Chemical Fate Information</b> | Not determined |
| <b>Other Information</b>         | Not applicable |

## 13. DISPOSAL CONSIDERATIONS

|                               |                                                                                 |
|-------------------------------|---------------------------------------------------------------------------------|
| <b>Disposal Method</b>        | Bury in a licensed landfill according to federal, state, and local regulations. |
| <b>Contaminated Packaging</b> | Follow all applicable national or local regulations.                            |

## 14. TRANSPORT INFORMATION

### Land Transportation

**DOT**  
Not restricted

**Canadian TDG**  
Not restricted

**ADR**  
Not restricted

### Air Transportation

**ICAO/IATA**  
Not restricted

### Sea Transportation

**IMDG**  
Not restricted

## Other Shipping Information

Labels: 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                                                                                                                       |
| EPA SARA (311,312) Hazard Class                   | None                                                                                                                                 |
| EPA SARA (313) Chemicals                          | This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372). |
| EPA CERCLA/Superfund Reportable Spill Quantity    | Not applicable.                                                                                                                      |
| EPA RCRA Hazardous Waste Classification           | If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.                             |
| California Proposition 65                         | All components listed do not apply to the California Proposition 65 Regulation.                                                      |
| MA Right-to-Know Law                              | Does not apply.                                                                                                                      |
| NJ Right-to-Know Law                              | Does not apply.                                                                                                                      |
| PA Right-to-Know Law                              | Does not apply.                                                                                                                      |

#### Canadian Regulations

|                        |                                     |
|------------------------|-------------------------------------|
| Canadian DSL Inventory | All components listed on inventory. |
| WHMIS Hazard Class     | Un-Controlled                       |

### 16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

|                        |                                                                                                                                                                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Additional Information | For additional information on the use of this product, contact your local Halliburton representative.<br><br>For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335. |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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\*\*\*END OF MSDS\*\*\*