

## MATERIAL SAFETY DATA SHEET

Product Trade Name: **EH-2**

Revision Date: 04-Jan-2011

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: EH-2  
Synonyms: None  
Chemical Family: Blend  
Application: Hardener

Manufacturer/Supplier: Halliburton Energy Services  
P.O. Box 1431  
Duncan, Oklahoma 73536-0431  
Emergency Telephone: (281) 575-5000

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Modified cycloaliphatic amine adduct	Mixture	60 - 100%	Not applicable	Not applicable
Methanol	67-56-1	30 - 60%	200 ppm (S)	200 ppm

### 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be fatal if swallowed. May cause blindness. May be absorbed through the skin. Repeated overexposure may cause liver and kidney effects. Flammable.

### 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	83
Flash Point/Range (C):	28
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	< 6.7
Flammability Limits in Air - Upper (%):	Not Determined

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

**Special Exposure Hazards** May be ignited by heat, sparks or flames. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases.

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

**NFPA Ratings:** Health 3, Flammability 3, Reactivity 0  
**HMS Ratings:** Health 3, Flammability 3, Reactivity 0

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.

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

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.

**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 12 months. Store at temperature above 32 F (0 C). Do not freeze.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Respiratory Protection** Positive pressure self-contained breathing apparatus if methanol is released.

**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

Physical State:	Liquid
Color:	Clear amber
Odor:	Ammonia
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	0.98
Density @ 20 C (lbs./gallon):	8.20
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	149
Boiling Point/Range (C):	65
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	< 96
Vapor Density (Air=1):	1.105
Percent Volatiles:	52
Evaporation Rate (Butyl Acetate=1):	4.6
Solubility in Water (g/100ml):	Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	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	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Oxides of nitrogen. Toxic fumes. 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. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness. May cause liver damage. May cause kidney damage.
Skin Contact	May cause severe skin irritation. May cause an allergic skin reaction. May be absorbed through the skin and produce nervous system effects.
Eye Contact	May cause eye burns.
Ingestion	May be fatal or cause blindness if swallowed. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.
Aggravated Medical Conditions	Skin disorders. Eye ailments.

**Chronic Effects/Carcinogenicity** Prolonged or repeated exposure may cause eye, blood, lung, liver, kidney, heart, central nervous system and spleen damage.

**Other Information** None known.

**Toxicity Tests**

**Oral Toxicity:** Not determined

**Dermal Toxicity:** Not determined

**Inhalation Toxicity:** Not determined

**Primary Irritation Effect:** Not determined

**Carcinogenicity** Not determined

**Genotoxicity:** Not determined

**Reproductive /  
Developmental Toxicity:** Not determined

**12. ECOLOGICAL INFORMATION**

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not determined

**Bio-accumulation** Not determined

**Ecotoxicological Information**

**Acute Fish Toxicity:** Not determined

**Acute Crustaceans Toxicity:** Not determined

**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

**13. DISPOSAL CONSIDERATIONS**

**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**

**Land Transportation**

**DOT**

UN1866, Resin Solution, 3, III, (28.3 C)  
NAERG 127

**Canadian TDG**

Resin Solution, 3, UN1866, III, (28.3 C)

**ADR**

UN1866,Resin Solution, 3, III

**Air Transportation**

**ICAO/IATA**

UN1866,Resin Solution, 3, III

**Sea Transportation**

**IMDG**

UN1866,Resin Solution, 3, III, (28.3 C)  
EmS F-E, S-E

**Other Shipping Information**

**Labels:** Flammable Liquid

**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** Acute Health Hazard  
Chronic Health Hazard  
Fire Hazard

**EPA SARA (313) Chemicals** This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372: Methanol//67-56-1

**EPA CERCLA/Superfund Reportable Spill Quantity** EPA Reportable Spill Quantity is 1524 Gallons based on Methanol (CAS: 67-56-1).

**EPA RCRA Hazardous Waste Classification** If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:  
  
Ignitability D001

**California Proposition 65** All components listed do not apply to the California Proposition 65 Regulation.

**MA Right-to-Know Law** One or more components listed.

**NJ Right-to-Know Law** One or more components listed.

**PA Right-to-Know Law** One or more components listed.

**Canadian Regulations**

**Canadian DSL Inventory** All components listed on inventory.

**WHMIS Hazard Class**

B2 Flammable Liquids  
D1A Very Toxic Materials  
D1B Toxic Materials

**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.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

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