

# MATERIAL SAFETY DATA SHEET

(USA)

(Complies with USA OSHA 29 CFR 1910.1200 and ANSI Z 400.1)

Version: 2

Revision date: 19 May 2009

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

**Product code:** F110  
**Product name:** EZEFL0\* F110 Surfactant  
**Company identification:** Schlumberger Technology Corporation  
110 Schlumberger Drive  
Sugar Land, Texas 77478, USA  
Telephone: 1-281-285-7873  
**Emergency telephone number:** USA: +1-281-595-3518 (24hr)

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

#### DANGER

**Main physical hazards:** Flammable liquid.  
**Main health hazards:** Causes eye irritation. Causes skin irritation. Contains methanol. Can be fatal or cause blindness if swallowed. Cannot be made non-toxic. Toxic: danger of very serious irreversible effects in contact with skin. May cause Central Nervous System (CNS) depression.  
**Other hazards:** Vapors may cause flash fire or explosion.  
**Precautions:** Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist.  
**HMS classification:** Health: **3** Flammability: **3** Physical hazard: **0**

**Form:** Liquid                      **Color:** Clear colorless                      **Odor:** Alcohols  
**Principle routes of exposure:**  
Eye contact. Skin contact. Respiratory system.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %- Range
Methanol	67-56-1	15-40
Ethoxylated alcohols	Proprietary	10-30
Ethoxylated alcohols #2	Proprietary	10-30

## 4. FIRST AID MEASURES

**Eye contact:** Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

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<b>Skin contact:</b>	Take off contaminated clothing and shoes immediately. After contact with skin, wash immediately with plenty of soap and water for at least 15 minutes. Seek medical attention.
<b>Ingestion:</b>	Do not induce vomiting without medical advice. Call a physician or Poison Control Center immediately. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, minimize the risk of aspiration by properly positioning the affected person.
<b>Inhalation:</b>	Move to fresh air in case of accidental inhalation of vapors. Call a physician or Poison Control Centre immediately. If breathing has stopped or heart has stopped, trained personnel should immediately administer artificial respiration or CPR, as required.

## 5. FIRE-FIGHTING MEASURES

<b>Fire hazard:</b>	Flammable liquid.
<b>OSHA Flammability Class:</b>	II
<b>Flash point:</b>	28 °C / 84 °F
<b>Method:</b>	Pensky-Martens CC
<b>Autoignition temperature:</b>	No data available.
<b>Flammability limits in air:</b>	
<b>Lower:</b>	6.0% (methanol)
<b>Upper:</b>	36.5% (methanol)
<b>Oxidizing properties:</b>	None.

**Suitable extinguishing media:**  
Alcohol Foam, CO<sub>2</sub>, Dry Chemical.

**Extinguishing media which must not be used for safety reasons:**  
None known.

**Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases:**

Vapors are heavier than air and may spread along floors. Vapors may cause flash fire or explosion.

**Other information:**

Vapors are heavier than air and may spread along floors.

**Special protective equipment for firefighters:**

Wear self contained breathing apparatus for fire fighting if necessary. Wear protective fire fighting clothing and avoid breathing vapors.

**NFPA rating:**

<b>Health:</b>	<b>3</b>
<b>Flammability:</b>	<b>3</b>
<b>Instability:</b>	<b>0</b>
<b>Special:</b>	<b>None</b>

## 6. ACCIDENTAL RELEASE MEASURES

<b>Main physical hazards:</b>	Flammable liquid.
<b>Other hazards:</b>	Vapors may cause flash fire or explosion.
<b>Personal precautions:</b>	Do not breathe vapors or spray mist. Keep away from heat, sparks, and flame. Do not get on skin or clothing. Wash thoroughly after handling. Avoid contact with eyes.

**Methods for cleaning up:** Contain with dikes. Use explosion proof equipment to recover. Remove all sources of ignition. Soak up residual on inert absorbant (sand). Put in steel or plastic drum approved for flammables.

**Environmental precautions:** Prevent further leakage or spillage. Keep out of waterways.

**7. HANDLING AND STORAGE**

**Handling:**

**Precautions:** Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist.

**Safe handling advice:** Keep airborne concentrations below exposure limits. Wear suitable protective equipment.

**Technical measures/ storage conditions:** Keep away from heat, sparks, and flame. Store out of direct sunlight in well ventilated area. Keep container closed when not in use. Use with adequate ventilation.

**Packaging requirements:** Steel or high density polyethylene (HDPE) container approved for flammables. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

**Incompatible products:** Oxidizing agents.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering measures to reduce exposure:** Control the source. Enclosure of the process. Other suitable methods.

**Hygiene measures:** Keep airborne concentrations below exposure limits. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Wear suitable protective equipment.

**Respiratory protection:** In case of insufficient ventilation, wear suitable respiratory equipment.

**Eye protection:** Tightly fitting safety goggles.

**Hand protection:** Impervious gloves. Butyl. Viton.

**Skin and body protection:** Chemical resistant suit. Chemical resistant boots.

**Occupational Exposure Limits**

Component	ACGIH - TLVs			OSHA - PELs		
	TWA / Ceiling	STEL	ACGIH - Skin	TWA / C	STEL	Final PELs - Skin
Methanol	200 ppm	250 ppm	Skin Notation	200 ppm TWA 260 mg/m <sup>3</sup> TWA	-	-
Ethoxylated alcohols	-	-	-	-	-	-
Ethoxylated alcohols #2	-	-	-	-	-	-

**Particles Not Otherwise Regulated/Specified [PNOR or PNOS] (insoluble or poorly soluble):**

OSHA PEL's for Inert or Nuisance Dust are covered by PNOR limits: respirable fraction: 5 mg/m<sup>3</sup>; total dust 15 mg/m<sup>3</sup>.

ACGIH PNOS Recommendations: airborne concentrations should be kept below 3 mg/m<sup>3</sup>, respirable particulate, and 10 mg/m<sup>3</sup>, inhalable particles.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Chemical characterization:</b>	Mixture of organic compounds.
<b>Fire hazard:</b>	Flammable liquid.
<b>Form:</b>	Liquid
<b>Color:</b>	Clear colorless
<b>Odor:</b>	Alcohols
<b>Odor threshold:</b>	No information available.
<b>pH:</b>	7
<b>Boiling point/range:</b>	No data available.
<b>Flash point:</b>	28 °C / 84 °F
<b>Method:</b>	Pensky-Martens CC.
<b>Flammability limits in air:</b>	
<b>Lower:</b>	6.0% (methanol)
<b>Upper:</b>	36.5% (methanol)
<b>Bulk density:</b>	Not applicable.
<b>Melting point/range:</b>	No data available.
<b>Decomposition temperature:</b>	> 232 °C / 450 °F
<b>Solubility:</b>	
<b>Water solubility:</b>	Dispersible.
<b>Fat solubility:</b>	No information available.
<b>Partition coefficient (n-octanol/water):</b>	See also SECTION 12
<b>Relative density:</b>	0.9 (@ 20°C)
<b>Vapor pressure:</b>	No data available.
<b>Vapor density:</b>	> 1 (air = 1)
<b>Viscosity:</b>	~ 5 mPa.s
<b>Evaporation rate:</b>	No data available.
<b>% Volatile (VOC):</b>	30

**10. STABILITY AND REACTIVITY****Stability:**

Stable under recommended storage conditions

**Conditions to avoid:**

Keep away from heat and sources of ignition.

**Incompatibility with other substances:**

Oxidizers.

**Hazardous decomposition products:**

When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released.

**Hazardous polymerization:**

Hazardous polymerization does not occur.

**Other hazards:**

Vapors may cause flash fire or explosion.

**11. TOXICOLOGICAL INFORMATION****PRODUCT TOXICOLOGICAL INFORMATION**

Information given is based on data on the components and the toxicology of similar products.

## Acute Health Hazard

<b>Eye contact:</b>	Severe eye irritation. Causes pain and redness. Prolonged or repeated contact may cause mild burn.
<b>Skin contact:</b>	Severe skin irritation. Toxic: danger of very serious irreversible effects in contact with skin. Substance may be absorbed through the skin which can contribute to damage to the optic nerve resulting in permanent vision changes, loss of vision, or total blindness. See COMPONENT TOXICOLOGICAL INFORMATION below.
<b>Ingestion:</b>	Contains methanol. Can be fatal or cause blindness. Cannot be made non-toxic. May cause Central Nervous System (CNS) depression. Aspiration hazard. Aspiration may cause pulmonary edema and pneumonitis.
<b>Inhalation:</b>	Toxic; can cause illness or death. Toxic: danger of very serious irreversible effects through inhalation. See COMPONENT TOXICOLOGICAL INFORMATION below.
<b>Sensitization - lung:</b>	Not known to cause allergic reaction.
<b>Sensitization - skin:</b>	See COMPONENT TOXICOLOGICAL INFORMATION below.
<b>Toxicologically synergistic products:</b>	None known.
<b>Other information:</b>	May cause headache, narcosis. May cause dizziness, nausea, vomiting, diarrhea.

## Chronic Health Hazard

<b>Carcinogenic effects:</b>	None known.
<b>Mutagenic effects:</b>	See COMPONENT TOXICOLOGICAL INFORMATION below.
<b>Teratogenic effects:</b>	Possibly causes birth defects.
<b>Reproductive toxicity:</b>	Not known to adversely affect reproductive functions and organs.
<b>Target organ effects:</b>	See COMPONENT TOXICOLOGICAL INFORMATION below.

## COMPONENT TOXICOLOGICAL INFORMATION

Component	Target Organ Effects	LD50 / LC50
Methanol	skin, eyes, CNS, GI tract, respiratory system	= 15800 mg/kg (Dermal LD50; Rabbit) = 5628 mg/kg (Oral LD50; Rat) = 64000 mg/kg (Inhalation LC50; Rat) 4 hr
Ethoxylated alcohols	-	-
Ethoxylated alcohols #2	-	-

Component	IARC Group 1 or 2:	ACGIH - Carcinogens:	OSHA Listed Carcinogens	NTP:
Methanol	-	-	-	-
Ethoxylated alcohols	-	-	-	-
Ethoxylated alcohols #2	-	-	-	-

Component	OTHER TOXICOLOGICAL INFORMATION
Methanol	Causes eye irritation. Toxic by ingestion and inhalation. Danger of very serious irreversible effects if swallowed. Can be aspirated into lungs during ingestion or vomiting. Aspiration can cause potentially fatal injury to the lungs. Chronic inhalation has shown to cause diminished vision. Acute oral and dermal exposure has shown to cause optic nerve effects, diminished vision and brain effects (necrosis and hemorrhaging). At first, symptoms of severe exposure are nausea, headache, vomiting, dizziness. The latent period is followed by development of metabolic acidosis and severe visual effects. Coma and death are usually due to respiratory failure. Fetotoxic and teratogenic effects observed in controlled animal studies.
Ethoxylated alcohols	Harmful if swallowed. Risk of serious damage to eyes.

Ethoxylated alcohols #2	Harmful if swallowed. Risk of serious damage to eyes.
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## 12. ECOLOGICAL INFORMATION

### PRODUCT INFORMATION

#### COMPONENT INFORMATION

Methanol

**Bioaccumulation:** log Pow = -0.7  
**Persistence / degradability:** Biodegradable.  
**Freshwater Fish Species Data** = 13 mg/L (LC50; rainbow trout (fingerling))

## 13. DISPOSAL CONSIDERATIONS

### Waste from residues / unused products:

Treat as hazardous waste. Dispose of in accordance with local regulations.

### Contaminated packaging:

Dispose of in accordance with local regulations. If reusable containers are used, send them back to the product supplier, after the required rinsing.

### EPA RCRA Hazardous Waste Code:

D001

## 14. TRANSPORT INFORMATION

### DOT:

**UN/NA Number:** UN 1992  
**CERCLA RQ:** 2100 Gallons (methanol)

**Packing size:** < 2100 gals  
**Hazard class:** 3 **Subsidiary hazard(s):** 6.1  
**Proper shipping name:** Flammable liquid, toxic, n.o.s (contains methanol), 3, (6.1), UN 1992, PG III  
**Label(s):** Flammable Liquid 3, Toxic 6.1

**Packing size:** > 2100 gals  
**Hazard class:** 3 **Subsidiary hazard(s):** 6.1  
**Proper shipping name:** Flammable liquid, toxic, n.o.s (contains methanol), 3, (6.1), UN 1992, PG III, RQ  
**Label(s):** Flammable Liquid 3, Toxic 6.1

### IMDG/IMO

**Shipping name:** FLAMMABLE LIQUID, TOXIC, N.O.S. (Methanol)  
**Label(s):** Flammable Liquid 3, Toxic 6.1  
**Class or Div.:** 3 **Subsidiary risk(s):** 6.1  
**UN number:** UN 1992  
**Packing group:** III  
**EMS:** F-E, S-D

### ICAO/IATA

**Shipping name:** Flammable liquid, toxic, n.o.s (contains methanol)  
**Label(s):** Flammable Liquid 3, Toxic 6.1

<b>Class or Div.:</b>	3	<b>Subsidiary risk(s):</b>	6.1
<b>UN number:</b>	UN 1992		
<b>Packing group:</b>	III		
<b>Packing instruction (passenger aircraft):</b>	309	<b>Max Net Qty/Pkg:</b>	60 L
<b>Packing instruction (cargo aircraft):</b>	310	<b>Max Net Qty/Pkg:</b>	220 L
<b>TDG (Canada):</b>			
<b>Shipping name:</b>	FLAMMABLE LIQUID, TOXIC, N.O.S. (contains methanol), 3, (6.1), UN 1992, PG III		
<b>Label(s):</b>	Flammable Liquid 3, Toxic 6.1		
<b>PIN:</b>	UN 1992		
<b>Class:</b>	3	<b>Subsidiary hazard(s):</b>	6.1
<b>Packing group:</b>	III		

**Note 1:**

For the applicable placard selection refer to the appropriate transport regulations; the selection may vary depending on the cargo size and categories of other hazardous materials in the cargo.

## 15. REGULATORY INFORMATION

### International Chemical Inventories

**USA, Toxic Substances Control Act inventory (TSCA):** This product complies with TSCA requirements.

**Canada, Domestic Substance List (DSL):** This product complies with DSL requirements.

### U.S.A. Regulations

**OSHA Hazard Communication Standard:**  
(Complies with USA OSHA 29 CFR 1910.1200 and ANSI Z 400.1)

**EPA RCRA Hazardous Waste Code:**  
D001

### **EPA, Sections 311 and 312 - Material Safety Data Sheet Requirements (40 CFR 370):**

<b>Immediate (Acute) Health Hazard:</b>	YES
<b>Delayed (Chronic) Health Hazard:</b>	YES
<b>Fire Hazard:</b>	YES
<b>Sudden Release or Pressure Hazard:</b>	None
<b>Reactive Hazard:</b>	None

**EPA, Sections 313 - List of Toxic Chemicals (40 CFR 372):**  
This product contains the following substance(s), which appear(s) on the List of Toxic Chemicals:

### Additional Regulatory Information

#### Methanol

**EPA, CERCLA Section 102a/103 Hazardous Substances (40 CFR 302.4):** Listed  
**CERCLA/SARA - Hazardous Substances and their RQs:** 2270 kg final RQ  
5000 lb final RQ  
**EPA, SARA TITLE III Section 304, Extremely Hazardous Substances (40 CFR 355.40):** None  
**California Proposition 65:** None

#### Ethoxylated alcohols

**EPA, CERCLA Section 102a/103 Hazardous Substances (40 CFR 302.4):** None  
**CERCLA/SARA - Hazardous Substances and their RQs:** None  
**EPA, SARA TITLE III Section 304, Extremely Hazardous Substances (40 CFR 355.40):** None  
**California Proposition 65:** None

Methanol

Ethoxylated alcohols #2

**EPA, CERCLA Section 102a/103 Hazardous Substances (40 CFR 302.4):** None

**CERCLA/SARA - Hazardous Substances and their RQs:** None

**EPA, SARA TITLE III Section 304, Extremely Hazardous Substances (40 CFR 355.40):** None

**California Proposition 65:** None

### **International Hazard Class**

#### **WHMIS Hazard Class:**

B2 (Flammable Liquids)

D1A (Immediate and Serious Toxic Effects - Very Toxic Material)

D1B (Immediate and Serious Toxic Effects - Toxic Material)

D2A (Other Toxic Effects - Very Toxic Material)

D2B (Other Toxic Effects - Toxic Material)

## **16. OTHER INFORMATION**

#### **Current references:**

1. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. *American Conference of Governmental Industrial Hygienists, Cincinnati OH.*
2. IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. *World Health Organization, International Agency for Research on Cancer. Geneva, Switzerland.*
3. Annual Report on Carcinogens. National Toxicology Program. *U.S. Department of Health and Human Services, Public Health Service.*
4. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS). *National Institute for Occupational Safety and Health. Cincinnati, OH.*
5. LOLI Database.

#### **Explanation of terms:**

ACGIH: American Conference of Governmental Industrial Hygienist  
ACGIH-TL: Threshold Limit Value  
DSL: Domestic Substance List  
HMIRC: Hazardous Materials Information Review Commission  
IARC: International Agency for Research on Cancer  
NTP: National Toxicology Program  
NIOSH: National Institute of Occupational Safety & Health  
NIOSH-REL: Recommended Exposure Limit  
OSHA: Occupational Safety & Health Administration  
OSHA-PEL: Permissible Exposure Limit  
TSCA: Toxic Substance Control Act (Inventory)

Occupational Exposure Limits indicators: TWA - Time Weighted Average; STEL - Short Term Limit; C - Ceiling Limit; units: [mg/m<sup>3</sup>]

#### **ACGIH Notations:**

"Skin" refers to the potential significant contribution to the overall exposure by the cutaneous route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance.

"A" notation indicates carcinogenicity as follows:

ACGIH classification: A1 - Confirmed Human Carcinogen; A2 - Suspected Human Carcinogen; A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans; A4 - Not Classifiable as a Human Carcinogen; A5 - Not suspected as a Human Carcinogen.

"SEN" refers to the potential for an agent to product sensitization as confirmed by human and animal data.

**Section(s) revised:** 12

**Prepared by:** Well Services Safety & Environment (WSSE).

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**End of the Material Safety Data Sheet**