

MATERIAL SAFETY DATA SHEET**Product Trade Name:** SEM-8™ EMULSIFIER**Revision Date:** 06-Jan-2014**Revision Number:** 21**1. PRODUCT AND COMPANY IDENTIFICATION****Product Identifier**

Product Trade Name: SEM-8™ EMULSIFIER
Synonyms: None
Chemical Family: Ethoxylated alcohols Sulfate
Internal ID Code: HM003938

Product Use

Application: Emulsifier

Manufacturer's Name and Contact Details

Name and Address Halliburton Energy Services
645 - 7th Ave SW Suite 2200
Calgary, AB
T2P 4G8
Canada

Emergency Telephone Number (281) 575-5000

Prepared By

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. HAZARD(S) IDENTIFICATION**WHMIS Classification**

WHMIS Hazard Class B2 Flammable Liquids
D2B Toxic Materials
E Corrosive Material

WHMIS Symbol(s)**Summary of hazards of the product**

Hazard Overview May cause severe eye irritation. May cause skin and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Repeated overexposure may cause liver and kidney effects. Flammable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Filing Date
------------	------------	---------------	-----------------------	-------------

Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	60 - 100%	Not applicable	Not applicable
Isopropanol	67-63-0	10 - 30%	Not applicable	Not applicable
Ethoxylated alcohols	Proprietary	1 - 5%	.	.

4. FIRST AID MEASURES

Description of 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.

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.

Skin

Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and laundry before reuse.

Ingestion

Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Most important symptoms and effects, both acute and delayed

May cause severe eye irritation. May cause skin and respiratory irritation. May cause headache, dizziness, and other central nervous system effects.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Special hazards arising from the substance or mixture

Special Exposure Hazards

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations.

Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Hazardous combustion products

Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions and emergency procedures

Protective Equipment

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

Precautions for safe handling

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.

Conditions for safe storage and Incompatible materials for storage

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Store in a dry location. Store in a cool well ventilated area. Product has a shelf life of 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits**Exposure Limits**

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable	Not applicable
Isopropanol	67-63-0	TWA: 200 ppm STEL: 400 ppm	400 ppm
Ethoxylated alcohols	Proprietary	Not applicable	Not applicable

Appropriate engineering controls**Engineering Controls**

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

Personal Protective Equipment (PPE)**Respiratory Protection**

Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator.
In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection

Impervious rubber gloves. Nitrile gloves. Neoprene gloves. Use Viton or 4H 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

Information on basic physical and chemical properties

Physical State: Liquid

Color: Clear light yellow

Odor: Alcohol

Odor Threshold: No information available

PropertyValues

Remarks/ - Method

pH:

7.0-8.5 @ 5%

pH Concentration of Solution:

No information available.

Freezing Point/Range

-29 °C

Melting Point/Range

No information available

Boiling Point/Range (C):

No information available.

Flash Point/Range (C):

33.9 °C

Flash Point Method:

No information available.

Autoignition Temperature (C):

No information available.

Flammability Limits in Air - Lower (%):

No information available.

Flammability Limits in Air - Upper (%):

No information available.

Evaporation Rate (Butyl Acetate=1):

< 1

Vapor Pressure @ 20 C (mmHg):	15.7
Vapor Density (Air=1):	> 1
Specific Gravity @ 20 C (Water=1):	1.054
Solubility in Water (g/100ml):	Soluble
Solubility in other solvents	No information available.
Partition Coefficient/n-Octanol/Water:	1.4
Decomposition Temperature (C):	No information available.
Viscosity	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available
Other Information	
Molecular Weight (g/mole):	No information available.
VOC Content (%)	No information available

10. STABILITY AND REACTIVITY

Conditions of Reactivity

Conditions to Avoid

Keep away from heat, sparks and flame.

Hazardous Polymerization:

Will Not Occur

Chemical Stability

Stable

Sensitivity to Static Discharge

Not available

Sensitivity to Mechanical Impact

Not available

Incompatible materials

Strong oxidizers. Strong alkalis.

Hazardous Decomposition Products

Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Routes of entry

Eye or skin contact, inhalation.

Information on Toxicological Effects

Acute effects from exposure

Product Information

Inhalation

Under certain conditions of use, some of the product ingredients may cause the following:
May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact

May cause severe eye irritation.

Skin Contact

May cause skin irritation. May cause skin defatting with prolonged exposure.

Ingestion

Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea. 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. May affect the heart and cardiovascular system.

Chronic effects from exposure

Chronic Effects/Carcinogenicity

Repeated overexposure may cause liver and kidney effects.

Irritancy of product

Irritation	Irritating to skin Corrosive to eyes
<u>Sensitization of product</u> Sensitization	Did not cause sensitization on laboratory animals (guinea pig)
<u>Mutagenicity</u> Mutagenic Effects	Not regarded as mutagenic
<u>Carcinogenicity</u> Carcinogenic Effects	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP, or OSHA.
<u>Reproductive Toxicity</u> Reproductive Toxicity	This product does not contain any known or suspected reproductive hazards
<u>Teratogenicity/embryotoxicity</u> Teratogenic	Not a confirmed teratogen or embryotoxin.
<u>Toxicologically synergistic material</u>	Isopropanol: Enhanced by the toxicity of carbon tetrachloride, 1,1,2-trichloroethane, chloroform, trichloroethylene, and dimethylnitrosamine (possibly carbon tetrachloride).

Acute Toxicity

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	> 2,000 mg/kg (Rat) (similar substance)	> 2,000 mg/kg (Rat) (similar substance)	No data available
Isopropanol	67-63-0	4396 mg/kg (Rat) 3600 mg/kg (mouse)	12800 mg/kg (Rat) 12870 mg/kg (Rabbit)	72.6 mg/L (Rat) 4 h
Ethoxylated alcohols	Proprietary	No data available	No data available	No data available

12. ECOLOGICAL INFORMATION

Toxicity
Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	No information available	No information available	No information available	No information available
Isopropanol	67-63-0	EC50: > 1000 mg/l(Desmodesmus subspicatus)	LC50: 9640 mg/l (Pimephales promelas)	No information available	EC50: 13299 mg/l (Daphnia magna)
Ethoxylated alcohols	Proprietary	No information available	No information available	No information available	No information available

Persistence and Degradability
 Product is biodegradable

Bioaccumulation potential
 Does not bioaccumulate

Mobility in soil
 No information available

Results of PBT and vPvB assessment
 No information available.

Other adverse effects**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

13. DISPOSAL CONSIDERATIONS**Disposal Method**

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

14. TRANSPORT INFORMATION**Canadian TDG**

UN Number: UN1993,
UN Proper Shipping Name: Flammable Liquid, N.O.S.
Transport Hazard Class(es): , 3
Packing Group: , III
EMS: EmS F-E, S-E

IATA/ICAO

UN Number: UN1993,
UN Proper Shipping Name: Flammable Liquid, N.O.S.
Transport Hazard Class(es): , 3
Packing Group: , III

IMDG/IMO

UN Number: UN1993,
UN Proper Shipping Name: Flammable Liquid, N.O.S.
Transport Hazard Class(es): , 3
Packing Group: , III
EMS: EmS F-E, S-E

Special Precautions for User

None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian Regulations**Canadian DSL Inventory**

All components listed on inventory or are exempt.

WHMIS Hazard Class

B2 Flammable Liquids
D2B Toxic Materials
E Corrosive Material

WHMIS Symbol(s)**US Regulations**
US TSCA Inventory

All components listed on inventory or are exempt.

16. OTHER INFORMATION**Preparation Information****Prepared By**Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com**Revision Date:**

06-Jan-2014

Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

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

Key or legend to abbreviations and acronyms

WHMIS: Workplace Hazardous Materials Information System

Key literature references and sources for datawww.ChemADVISOR.com/
NZ CCID
HERA**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

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