

MATERIAL SAFETY DATA SHEET

Product Trade Name: LOSURF-2000M

Revision Date: 24-Apr-2013

Revision Number: 4

1. Product and Company Identification

Product Identifier

Product Trade Name: LOSURF-2000M
Synonyms: None
Chemical Family: Organic hydrocarbon
Internal ID Code: HM005585

Product Use

Application: Surfactant

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
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2. Hazard(s) Identification

WHMIS Classification

WHMIS Hazard Class: D2B Toxic Materials
E Corrosive Material

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

Hazard Overview: May cause eye and skin burns. May cause respiratory irritation. May be harmful if swallowed.

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Filing Date
Sodium sulfate	7757-82-6	10 - 30%	Not applicable	Not applicable
Sulfonic acid salt	Proprietary	10 - 30%	-	-
Sulfonate	Proprietary	60 - 100%	-	-

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

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

Ingestion

Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Most important symptoms and effects, both acute and delayed

May cause eye and skin burns. May be harmful if swallowed.

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. Decomposition in fire may produce toxic gases.

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 sulfur. Carbon monoxide and carbon dioxide.

6. Accidental release measures

Personal precautions and emergency procedures

Protective Equipment

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

Precautions for safe handling

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

Conditions for safe storage and incompatible materials for storage

Store in a dry location. Product has a shelf life of 12 months.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits Exposure Limits

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
Sodium sulfate	7757-82-6	Not applicable	Not applicable
Sulfonic acid salt	Proprietary	Not applicable	Not applicable
Sulfonate	Proprietary	Not applicable	Not applicable

Appropriate engineering controls

Engineering Controls

Localized ventilation should be used to control dust levels.

Personal Protective Equipment (PPE)

Respiratory Protection

Dust/mist respirator. (N95, P2/P3)

Hand Protection

Polyvinylchloride gloves.

Skin Protection

Rubber apron.

Eye Protection

Dust proof goggles.

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: Solid

Color: Tan

Odor: Slight

Odor Threshold: No information available

Property

Values

Remarks/ - Method

pH:

No information available.

pH Concentration of Solution:

No information available.

Freezing Point/Range

No information available.

Melting Point/Range

No information available.

Boiling Point/Range (C):

No information available.

Flash Point/Range (C):

No information available.

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):

No information available.

Vapor Pressure @ 20 C (mmHg):

No information available.

Vapor Density (Air=1):

No information available.

Specific Gravity @ 20 C (Water=1):

0.700

Solubility in Water (g/100ml):

Soluble

Solubility in other solvents

No information available.

Partition Coefficient/n-Octanol/Water:

No information available.

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

None anticipated

Hazardous Polymerization:

Will Not Occur

Chemical Stability

Stable

Sensitivity to Static Discharge

Not available

Sensitivity to Mechanical Impact

Not available

Incompatible materials

Strong acids.

Hazardous Decomposition Products

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****Inhalation**

May cause irritation (upper respiratory) which includes soreness of the nose and throat, coughing and sneezing.

Eye Contact

May cause eye burns.

Skin Contact

May cause skin burns. Causes moderate skin irritation.

Ingestion

May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic effects from exposure**Chronic Effects/Carcinogenicity**

No data available to indicate product or components present at greater than 1% are chronic health hazards.

Irritancy of product**Irritation**

Corrosive to eyes Corrosive to skin

Sensitization of product**Sensitization**

Not confirmed to cause skin or respiratory sensitization.

Mutagenicity**Mutagenic Effects**

Not regarded as mutagenic

Carcinogenicity**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.

Reproductive Toxicity**Reproductive Toxicity**

This product does not contain any known or suspected reproductive hazards

Teratogenicity/embryotoxicity**Teratogenic**

Not a confirmed teratogen or embryotoxin.

Toxicologically synergistic material Not available**Acute Toxicity**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium sulfate	7757-82-6	10000 mg/kg (Rat)	No data available	No data available
Sulfonic acid salt	Proprietary	438 mg/kg (Rat)	No data available	No data available
Sulfonate	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	Toxicity for Invertebrates
Sodium sulfate	7757-82-6	No information available	LC50: 24000 mg/L (Gambusia affinis)	No information available	No information available
Sulfonic acid salt	Proprietary	No information available	No information available	No information available	No information available
Sulfonate	Proprietary	No information available	No information available	No information available	No information available

Persistence and Degradability

No information available

Bioaccumulation potential

No information available

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.

Contaminated Packaging

Follow all applicable national or local regulations.

14. Transport Information

Canadian TDG

UN Number: Not restricted.
 UN Proper Shipping Name: Not restricted
 Transport Hazard Class(es): Not applicable

IATA/CAO

UN Number: Not restricted.
 UN Proper Shipping Name: Not restricted
 Transport Hazard Class(es): Not applicable

IMDG/IMO

UN Number: Not restricted.
 UN Proper Shipping Name: Not restricted
 Transport Hazard Class(es): Not applicable

Special Precautions for User

None

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

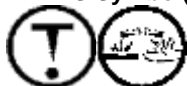
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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 ClassD2B 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:**

24-Apr-2013

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/**Disclaimer Statement**

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