

MATERIAL SAFETY DATA SHEET

Product Trade Name: **LOSURF-330 SURFACTANT**

Revision Date: 30-Nov-2015

Revision Number: 5

SECTION 1. Product and Company Identification

Product Identifier

Product Trade Name: LOSURF-330 SURFACTANT
Synonyms: None
Chemical Family: Nonionic Surfactant Blend
Internal ID Code HM007944

Product Use

Application: Surfactant

Manufacturer's Name and Contact Details

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

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Prepared By

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SECTION 2. Hazard(s) Identification

WHMIS Classification

WHMIS Hazard Class D2B Toxic Materials
 B2 Flammable Liquids

WHMIS Symbol(s)



Summary of hazards of the product

Hazard Overview May cause eye and skin irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Flammable.

SECTION 3: Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Decision Granted Date
Ethanol	64-17-5	30 - 60%	9470	November 23, 2015
Ethoxylated propoxylated alcohols	Proprietary	10 - 30%	9470	November 23, 2015
Ethoxylated polymer	Proprietary	5 - 10%	9470	November 23, 2015
Ethoxylated amine	Proprietary	1 - 5%	9470	November 23, 2015

SECTION 4. First aid measures

Description of first aid measures

Inhalation

If inhaled, remove to fresh air. If not breathing give artificial respiration (AR), preferably mouth-to-mouth. If breathing is difficult, oxygen should be given by trained personnel. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Get medical attention immediately.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 30 minutes while holding eyelids open and get medical attention immediately after flushing.

Skin

In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If breathing has stopped, trained personnel should begin rescue breathing / artificial respiration (AR) immediately. If the heart has stopped, trained personnel should begin CPR immediately. Obtain medical attention immediately.

Most important symptoms and effects, both acute and delayed

May cause eye irritation. May cause skin 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

SECTION 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 harmful 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 nitrogen. Carbon monoxide and carbon dioxide.

SECTION 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

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

SECTION 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. Avoid breathing mist.

Conditions for safe storage and Incompatible materials for storage

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

SECTION 8: Exposure Controls/Personal Protection

Occupational Exposure Limits

Exposure Limits

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
Ethanol	64-17-5	STEL: 1000 ppm	1000 ppm
Ethoxylated propoxylated alcohols	Proprietary	Not available	Not available
Ethoxylated polymer	Proprietary	Not available	Not available
Ethoxylated amine	Proprietary	Not available	Not available

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)

Personal Protective Equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection

If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Organic vapor respirator.

Hand Protection

Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Viton gloves (>= 0.7 mm thickness)
Polychloroprene gloves This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

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.

SECTION 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State: Liquid
Odor: Alcohol

Color: Clear light yellow
Odor Threshold: No information available

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	5-8 (5% 9:1 IPA/Water)
pH Concentration of Solution:	No information available.
Freezing Point/Range	-40.5 °C
Melting Point/Range	No information available
Boiling Point/Range (C):	100 °C / 212 °F
Flash Point/Range (°C):	27 °C
Flash Point Method:	PMCC
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):	.9446
Solubility in Water (g/100ml):	No information available.
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

SECTION 10. Stability and Reactivity

Conditions of Reactivity

Remarks

Not expected to be reactive.

Conditions to Avoid

Keep away from heat, sparks and flame.

Hazardous Polymerization:

Will Not Occur

Chemical Stability

Stable

Sensitivity to Static Discharge

Sensitive to static discharge. Ground and bond containers when transferring from one container to another.

Sensitivity to Mechanical Impact

Not available

Incompatible materials

Strong oxidizers.

Hazardous Decomposition Products

Oxides of nitrogen. Carbon monoxide and carbon dioxide.

SECTION 11. Toxicological Information

Routes of entry

Eye or skin contact, inhalation. Ingestion.

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
Skin Contact
Ingestion

May cause eye irritation.
 May cause skin irritation.
 Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

Chronic effects from exposure

Irritancy of product

Irritation

Irritating to eyes and skin

Sensitization of product

Sensitization

Did not cause sensitization on laboratory animals (similar substances)

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

Not regarded as a reproductive and developmental toxicant.

Teratogenicity/embryotoxicity

Teratogenic

Ethanol has been shown to cause fetotoxic and teratogenic effects in animals in the presence of material toxicity.

Toxicologically synergistic material Not available

Acute Toxicity

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethanol	64-17-5	7060 mg/kg (Rat) 10,470 mg/kg (Rat)	> 15,800 mg/kg (Rabbit) 17,100 mg/kg (Rabbit)	124.7 mg/L (Rat) 4h
Ethoxylated propoxylated alcohols	Proprietary	>5000 mg/kg (Rat) (similar substance) 600 mg/kg (Rat) (similar substance)	>2000 mg/kg (Rat) (similar substance) >5200 mg/kg (Rabbit) (similar substance)	>1.6 mg/L air (Rat) (similar substance) >0.22 mg/L (saturated concentration) (Rat) (similar substance)
Ethoxylated polymer	Proprietary	No data available	No data available	No data available
Ethoxylated amine	Proprietary	No data available	No data available	No data available

SECTION 12. Ecological Information

Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Ethanol	64-17-5	No information available	LC50 > 100 mg/L (Pimephales promelas)	No information available	LC50 9268 - 14,221 mg/L (Daphnia magna) LC50 5012 mg/L (Ceriodaphnia dubia) NOEC 9.6 mg/L (Daphnia magna)
Ethoxylated propoxylated alcohols	Proprietary	EC50 (72h) 0.75 mg/L (Pseudokirchnerella subcapitata) (similar substance) ErC50 (48h) 0.7 mg/L	LC50 (96h) 0.59 mg/L (Pleuronectes platessa) (similar substance) LC50 (96h) 1.6 mg/L	ErC50 (16.9h) > 10 g/L (Pseudomonas putida) (similar substance)	EC50 (48h) 0.14 mg/L (Daphnia magna) (similar substance) EC50 (48h) 02 mg/L (Daphnia magna)

		(Skeletonea costatum) EC10 9.79 mg/L (Selenastrum capricornutum) (similar substance) ErC50 1.1 mg/L (Scenedesmus subspicatus) (similar substance)	(Pimephales promelas) (similar substance) LC50 (96h) 3 mg/L (Brachydanio rerio) (similar substance)		(similar substance)
Ethoxylated polymer	Proprietary	No information available	No information available	No information available	No information available
Ethoxylated amine	Proprietary	No information available	No information available	No information available	No information available

Persistence and Degradability

Not readily biodegradable

Bioaccumulation potential

Bioaccumulative potential

Substances	CAS Number	Log Pow
Ethanol	64-17-5	-0.32
Ethoxylated propoxylated alcohols	Proprietary	Log Kow >3 (similar substances)
Ethoxylated polymer	Proprietary	No information available
Ethoxylated amine	Proprietary	No information available

Mobility in soil

No information available

Results of PBT and vPvB assessment

Substances	PBT and vPvB assessment
Ethanol	Not PBT/vPvB
Ethoxylated propoxylated alcohols	Not PBT/vPvB

Other adverse effects**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

SECTION 13. Disposal Considerations
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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.

SECTION 14. Transport Information
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Canadian TDG

UN Number: UN1993
 UN Proper Shipping Name: Flammable Liquid, N.O.S. (Contains Ethanol)
 Transport Hazard Class(es): 3
 Packing Group: III
 Environmental Hazards: Not applicable

IATA/ICAO

UN Number: UN1993

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

IMDG/IMO

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

Special Precautions for User: None

SECTION 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

D2B Toxic Materials
B2 Flammable Liquids

WHMIS Symbol(s)**US Regulations**

US TSCA Inventory All components listed on inventory or are exempt.

SECTION 16. Other Information**Preparation Information**

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

Revision Date: 30-Nov-2015

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 Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms

WHMIS: Workplace Hazardous Materials Information System

Key literature references and sources for data

www.ChemADVISOR.com/
NZ CCID
SIDS

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