HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **SSO-21M WINTERIZED**

Revision Date: 03-Oct-2014 **Revision Number:** 16

SECTION 1. Product and Company Identification

Product Identifier

Product Trade Name: SSO-21M WINTERIZED
Synonyms: None
Chemical Family: Blend
Internal ID Code HM001299

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
Telephone: 1-580-251-4335
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SECTION 2. Hazard(s) Identification

WHIMIS Classification

WHMIS Hazard Class
B3 Combustible Liquids
D1A Very Toxic Materials
D1B Toxic Materials
D2A Very Toxic Materials
D2B Toxic Materials
E Corrosive Material

WHMIS Symbol(s)

Summary of hazards of the product

Hazard Overview May cause eye burns. May cause skin and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be absorbed through the skin. May be harmful if swallowed. May cause blindness. May cause damage to internal organs. Combustible

SECTION 3: Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Decision Granted Date
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	30 - 60%	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	10 - 30%	Not applicable	Not applicable
Methanol	67-56-1	10 - 30%	Not applicable	Not applicable
Ethoxylated 1-hexanol	Proprietary	5 - 10%	8954	September 9, 2014
Alkyl hexanol	Proprietary	5 - 10%	8954	September 9, 2014
Water	7732-18-5	10 - 30%	Not applicable	Not applicable

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 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

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 burns. May cause allergic skin and respiratory reaction. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. May cause blindness.

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

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.

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

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
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.

SECTION 7. Handling and Storage

Precautions for safe handling
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Do NOT consume food, drink, or tobacco in contaminated areas. 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 at temperatures between 50 and 100 F (10 and 37.8 C). Do not freeze. 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
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not available	Not available
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm Skin	TWA: 50 ppm Skin
Methanol	67-56-1	TWA: 200 ppm STEL: 250 ppm Skin	TWA: 200 ppm
Ethoxylated 1-hexanol	Proprietary	Not available	Not available
Alkyl hexanol	Proprietary	TWA: 50 ppm	Not available
Water	7732-18-5	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)

Respiratory Protection Organic vapor respirator.
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.

SECTION 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State: Liquid
Odor: Mild Alcohol
Color: Clear to hazy
Odor Threshold: No information available

Property
Values
Remarks/ - Method

pH:	5 - 7 (10%)
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):	43 °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):	1
Vapor Density (Air=1):	No information available.
Specific Gravity @ 20 C (Water=1):	0.975 - 0.995
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

SECTION 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.

Hazardous Decomposition Products
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

Inhalation	Causes severe 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 corneal injury. May cause eye burns.
Skin Contact	May be absorbed through the skin and contribute to the symptoms listed under ingestion. May cause skin irritation.

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.

Chronic effects from exposure

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

Irritancy of product

Irritation Irritating to skin 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 Contains ethoxylated nonylphenol which is suspected of causing reproductive toxicity.

Teratogenicity/embryotoxicity

Teratogenic Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity.

Toxicologically synergistic material **Methanol:** In animals, high concentrations can increase the toxicity of other chemicals, particularly liver toxins like carbon tetrachloride. Ethanol significantly decreases the toxicity, because it competes for the same metabolic enzymes.

Acute Toxicity

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	1310 mg/kg (Rat) 4290-5000 mg/kg (Rat) 4290 mg/kg (Mouse) (similar substance) 510 mg/kg (Rat)	2 mL/kg (Rabbit) 2500 mg/kg (Rabbit)	> 0.0213 mL/L (Rat)
Ethylene glycol monobutyl ether	111-76-2	470 mg/kg (Rat) 1414 mg/kg (Guinea pig) 1746 mg/kg (Rat) 320 mg/kg (Rabbit) 530 mg/kg (Rat) 560 mg/kg (Rat) 3000 mg/kg (Rat) 2400 mg/kg (Rat)	220 mg/kg (Rabbit) 2270 mg/kg (Rat) 200 mg/kg (Guinea pig) >2000 mg/kg (Rabbit) 841 mg/kg (Rabbit) 435 mg/kg (Rabbit) >2000 mg/kg (Guinea pig) >2000 mg/kg (Rat) 100 mg/kg (Rabbit) 207 mg/kg (Guinea pig) 400-500 mg/kg (Rabbit)	450 ppm (Rat) 4h 2.174 mg/L (Rat) 4h 2.21 mg/L (Rat) 4h 450-486 ppm (Rat) 4h 925 ppm (Rat) 4h >633 ppm (Guinea pig) 1h
Methanol	67-56-1	> 1187 - 2769 mg/kg (Rat) 3000 mg/kg (Monkey) 300 mg/kg (Human)	15800 mg/kg (Rabbit) 393 mg/kg (Primate)	87.5 mg/L (Rat) 6h vapour 128.2 mg/L (Rat) 4h vapour 83.2 mg/L (Rat) 4 h 64000 ppm (Rat) 4 h 10 mg/L (Human)
Ethoxylated 1-hexanol	Proprietary	No data available	No data available	No data available
Alkyl hexanol	Proprietary	5190 µL/kg (Rat) 1516-2774 mg/kg (Rat) 1480 mg/kg (Rat) 600 mg/kg (Guinea pig) 2.46 ml/kg (2040 mg/kg) (Rat)	5660 µL/kg (Rabbit) 2520 mg/kg (Rabbit) 1980 mg/kg (Rabbit) 2.38 ml/kg (1970 mg/kg) (Rabbit)	227 ppm (Rat) 6h
Water	7732-18-5	90 mL/kg (Rat)	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
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	EC50(48h) 20 mg/L (growth inhibition) (Pseudokirchnerella subcapitata) EC50(48h) 50 mg/L (growth rate) (Pseudokirchnerella subcapitata)	LC50(96h): 5.6 mg/L (Brachydanio rerio) LC50(96h): 1.3 mg/L (Lepomis macrochirus) LC50(96h): 5 mg/L (Danio rerio)	No information available	EC50(48h): 1.821 mg/L (Daphnia sp.) (QSAR)
Ethylene glycol monobutyl ether	111-76-2	EC50: 839.56 mg/l (Skeletonema costatum) EC50(72h): 911 mg/L (biomass) EC50: > 500 mg/l (Scenedesmus subspicatus) NOEC(72h): 88 mg/L (biomass)(Pseudokirchnerella subcapitata)	LC50: > 1000 mg/l (Scophthalmus maximus juvenile) LC50(96h): 1474 mg/L (Oncorhynchus mykiss) NOEC(21d): > 100mg/L (Danio rerio)	TT/EC3(48h): 463 mg/L (Uronema parduzci) TT/EC3(72h): 73 mg/L (Entosiphon sulcatum) TT/EC3(16h): 700 mg/L (Pseudomonas putida)	EC50: >1000 mg/L (Daphnia magna) EC50 (48h): 1800 mg/L (Daphnia magna) EC50: 1875 mg/l (Daphnia magna) NOEC(21d)(reproduction): 100 mg/L (Daphnia magna)
Methanol	67-56-1	EC50(96h): ca. 22000 mg/L (Pseudokirchnerella subcapitata, Growth rate)	LC50: 28200 mg/l (Pimephales promelas) LC50(96h): 12700 – 15400 mg/L (Lepomis macrochirus) 200 hr NOEC for % Embryo-cardiovascular for stage 2 = 15800 mg/L	IC50(3h): > 1000 mg/L (activated sludge)	EC50(96h): 18260 mg/L (Daphnia magna) NOEC(21d): 122 mg/L (Daphnia magna, Reproduction)
Ethoxylated 1-hexanol	Proprietary	No information available	No information available	No information available	No information available
Alkyl hexanol	Proprietary	EC50: 11.5 mg/L (Desmodesmus subspicatus)	LC50: 32-37 mg/L (Oncorhynchus mykiss) LC50: 10 - 33 mg/L (Lepomis macrochirus)	No information available	TLM96: > 10000 mg/l (Crangon crangon) EC50 39 mg/L (Daphnia magna)
Water	7732-18-5	No information available	Brachydanio rerio 96 hours LC50 = 36.8 mg/L Oncorhynchus mykiss 96 hours LC50 = 2.6 mg/L	No information available	Daphnia magna 48 hours EC50 = 3.2 mg/L

Persistence and Degradability
No information available

Bioaccumlation potential
No information available

Substances	Log Pow
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	3.7 @ 25°C
Ethylene glycol monobutyl ether	0.81
Methanol	-0.77 BCF 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)
Alkyl hexanol	BCF: 115 L/kg (Cladophora glomerata)

Mobility in soil
No information available

Results of PBT and vPvB assessment
No information available.

Substances	PBT and vPvB assessment
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	PBT & vPvB
Methanol	Not PBT/vPvB

Other adverse effects
Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors

Substances	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	Group III	Cat. 1	

SECTION 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.

SECTION 14. Transport Information

Canadian TDG ul0
UN Number: UN1993
UN Proper Shipping Name: Flammable Liquid, N.O.S. (Contains Methanol)
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. (Contains Methanol)
Transport Hazard Class(es): 3
Packing Group: III

IMDG/IMO
UN Number: UN1993
UN Proper Shipping Name: Flammable Liquid, N.O.S. (Contains Methanol)
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:

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.

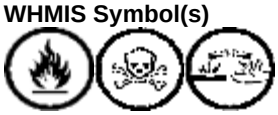
Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

WHMIS Hazard Class

B3 Combustible Liquids
D1A Very Toxic Materials
D1B Toxic Materials
D2A Very Toxic Materials
D2B Toxic Materials
E Corrosive Material

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

Revision Date: 03-Oct-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 data
www.ChemADVISOR.com/

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