HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **SPERSE-ALL M**

Revision Date: 03-Oct-2014 **Revision Number:** 10

SECTION 1. Product and Company Identification

Product Identifier

Product Trade Name: SPERSE-ALL M
Synonyms: None
Chemical Family: Blend
Internal ID Code HM001291

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
e-mail: fdunexchem@halliburton.com

SECTION 2. Hazard(s) Identification

WHIMIS Classification

WHMIS Hazard Class
B3 Combustible Liquids
D1B Toxic Materials
D2A Very Toxic Materials
D2B Toxic Materials

WHMIS Symbol(s)

Summary of hazards of the product

Hazard Overview May cause eye, 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. Combustible

SECTION 3: Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Decision Granted Date
Ethoxylated nonylphenol	Proprietary	60 - 100%	8953	September 9, 2014

Ethylene glycol	107-21-1	5 - 10%	Not applicable	Not applicable
Methanol	67-56-1	5 - 10%	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 15 minutes 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. If vomiting occurs naturally, have victim lie on their side, in recovery position, to reduce risk of aspiration, and obtain medical attention immediately.

Most important symptoms and effects, both acute and delayed

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

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
Ethoxylated nonylphenol	Proprietary	Not available	Not available
Ethylene glycol	107-21-1	Ceiling: 100 mg/m³ (aerosol only)	Ceiling: 50 ppm
Methanol	67-56-1	TWA: 200 ppm STEL: 250 ppm Skin	TWA: 200 ppm

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: Bland Alcohol
Color: Water white
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	6-8
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):	56 °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):	1.04
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	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 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	Causes severe eye irritation. May cause eye burns.
Skin Contact	May be absorbed through the skin and contribute to the symptoms listed under ingestion. May cause severe skin irritation.
Ingestion	May be fatal or cause blindness if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

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. May contain ethylene oxide in the headspace of the drum. Ethylene oxide is a cancer and reproductive hazard.

Irritancy of product

Irritation Causes severe irritation and or burns

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
Ethoxylated nonylphenol	Proprietary	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	107-21-1	4000 mg/kg (Rat) 7712 mg/kg (Rat) > 10000 mg/kg (Rat) 1670 mg/kg (Cat) 1400 – 1600 mg/kg (Human)	9530 µL/kg (Rabbit) > 3500 mg/kg (Mouse)	> 2.5 mg/L (Rat, 6h) (saturated concentration)
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)

SECTION 12. Ecological Information

Toxicity
Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Ethoxylated nonylphenol	Proprietary	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	107-21-1	EC50: 6500 - 13000 mg/L (Pseudokirchneriella subcapitata) TGK(8d): > 10000 mg/L (Scenedesmus quadricauda)	LC50: 41000 mg/L (Oncorhynchus mykiss) LC50(96h): 72860 mg/L (Pimephales promelas) NOEC(7d): 32000 mg/L (mortality) (Pimephales promelas)	TTC(16h): > 10000 mg/L (Pseudomonas putida) EC20(30 m): > 1995 mg/L (activated sludge, domestic) (similar substance – diethylene glycol)	EC50: 46300 mg/L (Daphnia magna) EC50(48h): >100 mg/L (Daphnia magna) NOEC(7d): 8590 mg/L (reproduction) (Ceriodaphnia dubia)
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)

Persistence and Degradability
No information available

Bioaccumlation potential
No information available

Substances	**Log Pow**
Ethoxylated nonylphenol	3.7 @ 25°C
Ethylene glycol	-1.36
Methanol	-0.77 BCF 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)

Mobility in soil
No information available

Results of PBT and vPvB assessment
No information available.

Substances	**PBT and vPvB assessment**
Ethoxylated nonylphenol	PBT & vPvB
Ethylene glycol	Not PBT/vPvB
Methanol	Not PBT/vPvB

Other adverse effects
Endocrine Disruptor Information
This product contains ethoxylated nonylphenols

Substances	**EU - Endocrine Disrupters Candidate List**	**EU - Endocrine Disruptors - Evaluated Substances**	**Japan - Endocrine Disruptor Information**
Ethoxylated nonylphenol	Group III	Cat. 1	

SECTION 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.

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

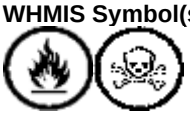
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian Regulations

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

WHMIS Hazard Class
B3 Combustible Liquids
D1B Toxic Materials
D2A Very Toxic Materials
D2B Toxic Materials

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*****