

MATERIAL SAFETY DATA SHEET

Product Trade Name: OilPerm FMM-3

Revision Date: 25-Nov-2013

Revision Number: 4

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Trade Name: OilPerm FMM-3
Synonyms: None
Chemical Family: Blend
Internal ID Code: HM007598

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

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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
Ethoxylated alcohols	Proprietary	30 - 60%	.	.

Isopropanol	67-63-0	10 - 30%	Not applicable	Not applicable
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	1 - 5%	Not applicable	Not applicable

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

Check for and remove contact lenses if present. 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 launder before reuse.

Ingestion

Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration. Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

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. May cause allergic skin reaction.

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. May be ignited by heat, sparks or flames.

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.

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

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

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Avoid breathing mist. 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. Terpene containing products should be stored in phenolic-lined metal, stainless steel, PET, or fluorinated plastic containers. 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
Ethoxylated alcohols	Proprietary	Not applicable	Not applicable
Isopropanol	67-63-0	TWA: 200 ppm STEL: 400 ppm	400 ppm
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	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**

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, 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.

In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection

Nitrile gloves. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State: Liquid

Color: Light yellow

Odor: Alcohol

Odor Threshold: No information available

Property**Values**

Remarks/ - Method

pH:

5 -7

pH Concentration of Solution:

No information available.

Freezing Point/Range

23.3 °C

Melting Point/Range

No information available

Boiling Point/Range (C):

No information available.

Flash Point/Range (C):

34.4 °C

Flash Point Method:	PMCC
Autoignition Temperature (C):	No information available.
Flammability Limits in Air - Lower (%):	0.7
Flammability Limits in Air - Upper (%):	6.1
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):	.9661 - 1.0055
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	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

Iodine pentafluorethylene Strong acids. Strong alkalis. Strong oxidizers.

Hazardous Decomposition Products

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 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 moderate to severe eye irritation.

Skin Contact

May cause skin defatting with prolonged exposure. May cause skin irritation. May cause an allergic skin reaction.

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.

Chronic effects from exposure
Chronic Effects/Carcinogenicity

Repeated overexposure may cause liver and kidney effects.

Irritancy of product
Irritation

Severe eye irritant Irritating to skin

Sensitization of product
Sensitization

May cause sensitization by skin contact

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 **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
Ethoxylated alcohols	Proprietary	2 g/kg (Rat)	No data available	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
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	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)
Ethoxylated alcohols	Proprietary	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)
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	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: 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 ByChemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com**Revision Date:**

25-Nov-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*****