

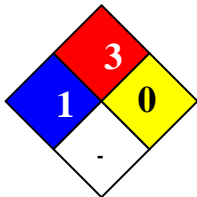




Material Safety Data Sheet

Protective Equipment	TDG	WHMIS
 <p>Chemical goggles, chemically resistant gloves, and rubber apron</p> <p>See SECTION VIII for details</p>	<p>Shipping Name: FLAMMABLE LIQUID, N.O.S. (Contains Methyl Alcohol), TDG Classification: Class 3 UN Number (PIN): UN 1993 Packing Group: PG II Emergency Response Guide Number: 128 Emergency Phone: (403) 266 6000</p> <p>See SECTION XIV for details</p>	 <p>B-2 D-2(A), D-2(B)</p> <p>See SECTION XV for details</p>
DOT		NFPA
<p>CAL</p>	<p>Shipping Name: FLAMMABLE LIQUID, N.O.S. (Contains Methyl Alcohol), TDG Classification: Class 3 UN Number (PIN): UN 1993 Packing Group: PG III Emergency Phone: (403) 266 6000</p>	

SECTION I: Chemical Product and Company Identification

Common/Trade Name	DWP-938-1
Synonyms	Not Available
Chemical Name	Not Available
Chemical Formula	Not Available
Chemical Family	Surfactant
Supplier	Calfrac Well Services Ltd. 411-8 th Avenue SW Calgary, Alberta T2P 1E3
Document Number	MSDS-DWP-938-1 Rev 1
Date of Preparation	October 1, 2007
Prepared By	Calfrac Well Services Ltd
Phone number of Preparer	(403) 266 6000
Material Uses	Fracturing Fluid Surfactant

SECTION II: Hazardous Ingredients

Name	Percent (%)	CAS#	LD ₅₀ (oral rat)	LC ₅₀ (dermal rabbit)
METHYL ALCOHOL	20%	67-56-1	Not Available	Not Available
Alcohol Alkoxylates	10-20%	N/A	Not Available	Not Available

SECTION III: Hazards Identification

Routes of Entry	[XX] SKIN [XX] EYE CONTACT [XX] INHALATION [XX] INGESTION
Threshold Limit Value	N/A
Skin Contact	Prolonged contact may cause irritation, drying and cracking
Eye Contact	Severe irritant. Causes redness, irritation and tissue destruction.
Ingestion	May be harmful if ingested. Components of this product may be aspirated into the lungs during swallowing or vomiting of swallowed material.
Inhalation	Vapors and mist may irritate the nose and throat. Inhalation of higher

	concentrations may cause lightheadedness, headaches, dizziness or unconsciousness.
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SECTION IV: First Aid Measures

Skin Contact	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victims exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists seek medical attention. Wash contaminated clothing before reusing.
Eye Contact	Immediately flush eyes with a large amount of water for at least 15 minutes. Washing eyes within one minute is essential to achieve maximum effectiveness. Seek medical attention immediately
Ingestion	<u>SLIGHT INGESTION:</u> Remove dentures if any. Watch for an obstruction in the victims mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victims teeth. Have a conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Seek immediate medical attention. <u>HAZARDOUS INGESTION:</u> Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Remove dentures if any. Watch for an obstruction in the victims mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victims teeth. If a soft pad can be inserted between the victims teeth, it will protect the tongue from being bitten. A badly bleeding tongue immensely complicates the patients problems. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. If convulsions occur, do not restrain the victim, but do remove objects with which he (she) might injure himself (herself) or orient the victim to prevent him (her) from striking fixed heavy objects. If the convulsions cease, turn the victim on the side or face down so that any fluid in the mouth will drain. Seek immediate medical attention.
Inhalation	<u>SLIGHT INHALATION:</u> Allow the victim to rest in a well ventilated area. Seek immediate medical attention. <u>HAZARDOUS INHALATION:</u> Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention

SECTION V: Fire Fighting Measures

Flash Point (method)	78°F Open Cup
Flammable Limits	LOWER: 6% (Methyl Alcohol) UPPER: 36.5 % (Methyl Alcohol)
Extinguishing Media	Flammable liquid, soluble or dispersed in water.
Special Fire Fighting Procedures	<u>SMALL FIRE:</u> Use DRY chemicals, CO2, water spray or alcohol foam. <u>LARGE FIRE:</u> Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto ignition or explosion.
Unusual Fire and Explosion Hazards	Flammable to very flammable in presence of open flames and sparks, of heat, of combustible materials. Very slightly to slightly flammable in presence of oxidizing materials, of reducing materials. Keep container tightly closed. Material supports combustion

SECTION VI: Accidental Release Measures

Steps to be taken in case the Material is Spilled or Released	<p><u>SMALL SPILL:</u> Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container.</p> <p><u>LARGE SPILL:</u> Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition</p>
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SECTION VII: Handling and Storage

Precautions to be taken in Handling and Storing	<p><u>STORAGE</u> Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).</p> <p><u>HANDLING</u> Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles as oxidizing agents, acids, alkalis.</p>
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SECTION VIII: Exposure Control/Personal Protection

Special Protection Information	
Respiratory Protection	Use of chemical cartridge respirators when PEL and TLV are exceeded.
Ventilation	General mechanical; 10 changes per hour suggested
Protective Gloves	Chemical Resistant
Eye Protection	Goggles
Other Protective Equipment (Specify)	Apron, FR Coveralls

SECTION IX: Physical and Chemical Properties

Appearance	Colorless slightly hazy liquid.
Odor	Sweet odor (Alcohol like)
Specific Gravity	0.96
Boiling Point (°C)	>180° F
Melting Point (°C)	Not Determined
Solubility in Water	Easily soluble in cold water, hot water, methanol. Soluble in diethyl ether.
Percent Volatile by Volume	Nor Determined
Evaporation Rate	Not Determined
Vapor Pressure (mm Hg)	Not Determined
Vapor Density (Air = 1)	1.19
pH	Neutral

SECTION X: Stability and Reactivity

Stability	<input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE
Incompatibility (Conditions to Avoid)	High reactive with oxidizing agents. Slightly reactive to reactive with acids, alkalis. Very slightly to slightly reactive with reducing agents, organic materials, metals.
Conditions of Reactivity	Not Known
Hazardous Decomposition Products	CO _x , smoke on combustion
Hazardous Polymerization	<input checked="" type="checkbox"/> WILL NOT OCCUR <input type="checkbox"/> MAY OCCUR

SECTION XI: Toxicological Information

Sensitization to Product	No Information Available
Carcinogenicity	No Information Available
Irritancy to Product	No Information Available
Reproductive Toxicity	No Information Available
Teratogenicity	No Information Available
Mutagenicity	No Information Available
Chronic Exposure	Toxic to the nervous system, reproductive system, blood, kidneys and liver
Name of Toxicological Synergistic Products	No Information Available

SECTION XII: Ecological Information

Ecological Information	Not Available
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SECTION XIII: Disposal Considerations

Waste Disposal Method	Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.
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SECTION XIV: Transportation Information

Proper Shipping Name	FLAMMABLE LIQUID, N.O.S. (Contains Methyl Alcohol),
Class	Class 3
TDG Label	Flammable
UN Number (PIN)	UN 1993
TDG Placard	Flammable
Packing Group	PG II
Emergency Response Guide Number	128
Emergency Telephone	(403) 266 6000

SECTION XV: Regulatory Information

WHMIS Classification	Class B	Division 2	Subdivision
	Class D	Division 2	Subdivision A
	Class D	Division 2	Subdivision B

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR

SECTION XVI: Other

Other Information	October 11, 2007 New product introduced.
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The information contained herein is offered only as a guide to the handling of this specific product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied. Calfrac Well Services Ltd. will not be liable for any damages, losses, injuries, or consequential damages, which may result from the use of or reliance on any information contained herein.