



Material Safety Data Sheet

Protective Equipment	TDG	WHMIS
<p>See SECTION VIII for details</p>	<p>Shipping Name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methanol) TDG Classification: Class 3 (8) UN Number (PIN): UN 2924 Packing Group: PG III Emergency Response Guide Number: 132 Emergency Phone: (403) 266 6000</p> <p>See SECTION XIV for details</p>	<p>B-2 D-1(A) D-2(A) E</p> <p>See SECTION XV for details</p>
	DOT	NFPA
<p>CAL</p>	<p>Shipping Name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methanol) HAZMAT Classification: Class 3 (8) UN Number (PIN): UN 2924 Packing Group: PG III Emergency Phone: (403) 266 6000</p>	

SECTION I: Chemical Product and Company Identification

Common/Trade Name	DAP-901-1
Synonyms	Not Available
Chemical Name	Not Available
Chemical Formula	Not Available
Chemical Family	Not Available
Supplier	Calfrac Well Services Ltd. 411-8 th Avenue SW Calgary, Alberta T2P 1E3
Document Number	MSDS-DAP-901-1 Rev 3
Date of Preparation	December 30, 2009
Prepared By	Calfrac Well Services Ltd
Phone number of Preparer	(403) 266 6000
Material Uses	Oilfield Acidizing Additive

SECTION II: Hazardous Ingredients

Name	Percent (%)	CAS#	LD ₅₀ (oral rat)	LC ₅₀ (dermal rabbit)
1. Methanol	10-30	67-56-1	5628 mg/kg	Not Determined
2. Phosphoric Acid ammonium salt	1-5	Trade Secret	Not Determined	Not Determined
3. Ammonium chloride	5-10	12125-02-9	1650 mg/kg	Not Determined
4. Organic phosphonate	10-30	Trade Secret	7180 mg/kg	Not Determined
5. Amine salt	1-5	Trade Secret	Not Determined	Not Determined
6. Oxyalkylated polyamine	1-5	Trade Secret	Not Determined	Not Determined

HMIRC Granted December 14, 2009; Registry No. 4868

SECTION III: Hazards Identification	
Routes of Entry	[XX] SKIN [XX] EYE CONTACT [XX] INHALATION [XX] INGESTION
Threshold Limit Value	ACGIH TLV: Methanol 200 ppm (TWA) Ammonium chloride 10 mg/m ³ (TWA)
Skin Contact	A component of this product can be absorbed through the skin upon direct contact, possibly resulting in toxic effects similar to those of inhalation. Contact with skin can produce severe irritation or burns with possible in-depth injury.
Eye Contact	Direct eye contact may cause severe irritation or burns. If not immediately removed, may cause permanent eye damage. Corrosive to the eyes. Mists and vapors may cause moderate to severe eye irritation.
Ingestion	Harmful if swallowed. May be readily absorbed through the gastrointestinal tract. Corrosive. In extreme cases, may cause liver and kidney damage. Effects of ingestion are similar to those of inhalation.
Inhalation	Inhalation may cause irritation to the respiratory tract. Inhalation of high concentrations may cause headache, nausea, giddiness, and shortness of breath. Prolonged, repeated or high exposures to the vapor of a component(s) of this product may cause visual disturbances and eye damage.

SECTION IV: First Aid Measures	
Skin Contact	Wash skin with soap and water for at least 20-60 minutes. If rash or irritation develops, consult a physician. Launder soiled clothing immediately before reuse.
Eye Contact	Flush immediately with water for 15 minutes. Consult a physician.
Ingestion	DO NOT INDUCE VOMITING. Wash out mouth with water. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have the victim lean forward to reduce the risk of aspiration into the lungs. Consult a physician.
Inhalation	Remove to fresh air. Administer oxygen if necessary. Consult a physician if symptoms persist or if exposure was severe.

Note to physician: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against shock and convulsion may be necessary.

SECTION V: Fire Fighting Measures	
Flash Point (method)	29°C (SFCC) 84.9°F
Flammable Limits	Not Determined
Extinguishing Media	Alcohol foam, CO ₂ , Dry Chemical, Foam, Water Fog
Special Fire Fighting Procedures	Use self-contained breathing apparatus with full facepiece operated under pressure-demand.
Unusual Fire and Explosion Hazards	Ground container and personnel before transferring

SECTION VI: Accidental Release Measures	
Steps to be taken in case the Material is Spilled or Released	Use PPE as necessary. Absorb with a suitable chemical absorbent. Dispose of material in accordance with local, provincial and federal regulations. Dike to prevent entry into sewers or waterways.

SECTION VII: Handling and Storage	
Precautions to be taken in Handling and Storing	Flammable liquid. Avoid heat, sparks, and open flame. Avoid breathing vapor and contact with eyes, skin and clothing. Keep container closed when not in use. Chemical residue may remain in emptied container. Do not reuse empty containers without commercial cleaning or reconditioning. Use in well-ventilated area.

SECTION VIII: Exposure Control/Personal Protection

Special Protection Information	
Respiratory Protection	In emergency situations, use of a NIOSH-approved respirator may be required.
Ventilation	General ventilation should be provided to maintain ambient concentrations below nuisance levels.
Protective Gloves	Chemical resistant
Eye Protection	Goggles
Other Protective Equipment (Specify)	Apron

SECTION IX: Physical and Chemical Properties

Appearance	Amber liquid
Odor	Alcohol
Specific Gravity	1.096-1.108 @ 16°C (60°F)
Boiling Point (°C)	Not determined
Melting Point (°C)	Not determined
Solubility in Water	Soluble
Percent Volatile by Volume	Not determined
Evaporation Rate	Slower than ether
Vapor Pressure (mm Hg)	35.7 @ 21°C
Vapor Density (Air = 1)	>1 (90°F)
pH	1.9-2.1 (Neat without dilution)

SECTION X: Stability and Reactivity

Stability	<input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE
Incompatibility (Conditions to Avoid)	Strong oxidizers, heat and open flame.
Conditions of Reactivity	Methanol will react with a number of chemicals
Hazardous Decomposition Products	None known
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	Birth defects in rats
Teratogenicity	Contains a material which may cause embryo/fetotoxicity based on animal data. Studies have shown that inhalation of a component(s) of this product has produced teratogenic effects in laboratory animals.
Mutagenicity	This product has produced mutagenicity in animal studies
Chronic Exposure	Prolonged, repeated or high exposures to the vapor of a component(s) of this product may cause visual disturbances and eye damage. In extreme cases, may cause temporary or permanent blindness, metabolic acidosis, and CNS depression which can possibly lead to death. Studies have shown that a component(s) of this product has produced teratogenic effects in laboratory animals. Animal studies have shown that a component(s) of this product is associated with adverse effects of embryo/fetotoxicity at non-maternally toxic dosage levels.
Name of Toxicological Synergistic Products	No Information Available

SECTION XII: Ecological Information

Ecological Information	No Information Available
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SECTION XIII: Disposal Considerations

Waste Disposal Method	Responsibility for proper waste disposal lies in the hands of the generator. Dispose of any waste in accordance with local, provincial and federal regulations. These regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.
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SECTION XIV: Transportation Information

Proper Shipping Name	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methanol)
Class	Class 3 (8)
TDG Label	Flammable, Corrosive
UN Number (PIN)	UN 2924
TDG Placard	Flammable
Packing Group	PG III
Emergency Response Guide Number	132
Emergency Telephone	(403) 266 6000

SECTION XV: Regulatory Information

WHMIS Classification	Class	Division	Subdivision
	B	2	
	D	1	A
	D	2	A
	E		

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	<p>March 15, 2010 change made to reflect information from supplier January 11, 2003 Changes made to Section XIV: Transportation Information TDG Label now reads Flammable, Corrosive October 8, 2002: Changes made to SECTION XIV: Transportation Information Proper Shipping Name changed to reflect Clear Language TDG Classification changed from 3.3 to 3 (8) to reflect Clear Language</p>
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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.