

SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

SECTION 1: IDENTIFICATION

Product Name: GLYCOL ETHER DM

Chemical Family: Glycol Ethers

CAS Number: 111-77-3

Chemical Name: 2-(2-methoxyethoxy) ethanol

Company

Silver Fern Chemical, Inc.
2226 Queen Anne Avenue North
Suite #C
Seattle WA 98109, USA

Business Contact

Customer Service: 206-282-3376
info@silverfernchemical.com

24 Hour Emergency Contact

Infotrac 800-535-5053
Outside USA & Canada 352-323-3500

SECTION 2: HAZARD IDENTIFICATION

Emergency Overview

This material is HAZARDOUS by OSHA Hazard Communication definition.

Signal Word

WARNING!

Hazards

Combustible liquid. Eye irritant. Skin irritant. Respiratory tract irritant. CNS depressant.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 2

Reactivity: 0

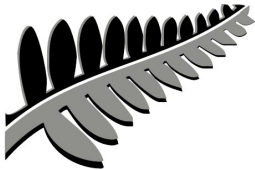
Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 2

Reactivity: 0



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

Physical State: Liquid

Color: Clear

Odor: Pleasant. Mild aromatic.

Odor Threshold: No value available.

Potential Health Effects

Routes of Exposure

Eye Skin. Inhalation Ingestion

Signs and Symptoms of Acute Exposure

See component summary.

Diethylene glycol monomethyl ether 111-77-3

May be irritating to the eyes.

Ethanol, 2-methoxy 109-86-4

Eye, skin and respiratory tract irritant. May be harmful if inhaled ingested or absorbed through the skin. Overexposure may cause Central Nervous System depression.

Skin: May be irritating to the skin. Possible systemic toxicity by skin absorption.

Inhalation: Due to low vapor pressure, this mixture is not expected to present an inhalation hazard at ambient temperatures.

Eye: May be irritating to the eyes.

Ingestion: Ingestion not a likely route of exposure.

Chronic Health Effects: See component summary.

Diethylene glycol monomethyl ether 111-77-3

Extensive/prolonged or repeated exposure to this material can result in significant absorption. Repeated or prolonged exposure to mists of this material may cause long-term adverse health effects.

Ethanol, 2-methoxy 109-86-4

Prolonged or repeated exposure to liquid can cause irritation such as redness, burning and cracking of the skin and dermatitis. Effects caused by chronic exposures include toxic encephalopathy, bone marrow depression without hemolysis, lung, kidney and liver damage, lethargy, loss of appetite, tremors, fever, bed wetting and marked anemia.

Conditions Aggravated by Exposure

Any pre-existing disorders or diseases of the: skin and/or eyes Special precautions are necessary for pregnant women and nursing mothers.



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component Name	CAS #	EU Inventory	Concentration	Wt.%*	Risk	Symbol
Diethylene glycol monomethyl ether	111-77-3	203-906-6	99.0	<= 100.0	R63	Xn
Ethanol, 2-methoxy	109-86-4	203-713-7		<= 0.5	R60, R61, R10, R20/21/22	T

* Concentration of gaseous products or materials is given in Mole %
Compositions given are typical values not specifications.

SECTION 4: FIRST AID MEASURES

General

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific information refer to the Emergency Overview in Section 3 of this MSDS.

Skin

Immediately flush affected area with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse. If irritation persists, get medical attention.

Inhalation

If symptoms are experienced, move victim to fresh air. Seek medical attention if discomfort persists.

Eye

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to reduce risk of aspiration. Get medical attention immediately.

SECTION 5: FIRE FIGHTING MEASURES

Flammable Properties

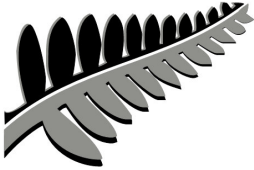
Classification: Combustible liquid.

Flash Point: 83.9 °C (183.02 °F) closed cup

Auto-Ignition Temperature: 192.85 °C (379.13 °F)

Lower Flammable Limit: 1.38 vol%

Upper Flammable Limit: 22.7 vol%



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

Extinguishing Media

Suitable: SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam LARGE FIRE: Use water spray, water fog or alcohol-resistant foam

Protection of Firefighters

Protective Equipment/Clothing: Wear an approved positive pressure self-contained breathing apparatus and firefighter turnout gear.

Fire Fighting Guidance: Avoid sparks, heat, and open flame. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire.

Hazardous Combustion Products: Carbon oxides (CO, CO₂)

SECTION 6: ACCIDENTAL RELEASE MEASURES

Release Response

Contain spill with dike to prevent entry into sewers or waterways. For large spills, dike and pump into properly labeled containers for reclamation or disposal. For small spills, soak up with absorbent material and place in properly labeled containers for disposal. All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

SECTION 7: HANDLING AND STORAGE

Handling

Do not handle near heat, sparks, or flame. Avoid contact with incompatible agents. Use only with adequate ventilation/personal protection. Avoid contact with eyes, skin and clothing. Do not enter storage area unless adequately ventilated. Metal containers involved in the transfer of this material should be grounded and bonded. It is recommended that any liquid product exposed to air not be highly concentrated by evaporation without first assuring that no peroxide is present.

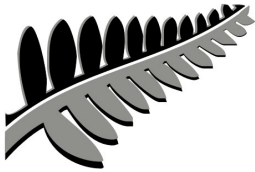
Storage

Store containers in a cool, dry, ventilated, fire resistant area away from sources of ignition and incompatible materials. Keep container tightly closed and properly labeled.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Emergency shower and eyewash facility should be in close proximity (ANSI Z358.1)



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

Personal Protection

Inhalation: A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use.

Skin: Wear chemical resistant gloves such as rubber, neoprene or vinyl. Appropriate protective clothing should be worn to prevent skin contact.

Eye: Wear safety glasses as minimum eye protection. Conditions may warrant the use of chemical goggles and possibly a face shield. Consult your standard operating procedure or safety professional for advice. Use protective eye and face devices that comply with ANSI Z87.1-1987.

Occupational Exposure Limits:

<u>Component Name</u>	<u>Source / Date</u>	<u>Value</u>	<u>Type</u>	<u>Notation</u>
Diethylene glycol monomethyl ether	US (ACGIH) / 2003	N/L		
	US (OSHA) / 2003	N/L		
Ethanol, 2-methoxy	US (ACGIH) / 2006	0.1 ppm	8 HRS/TWA	Skin.
	US (OSHA) / 2003	25 ppm	8 HRS/TWA	Skin.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid. Clear

Odor: Pleasant. Mild aromatic.

Odor Threshold: No value available.

pH: Not applicable.

Boiling Point/Boiling Range: 193.6 °C (380.48 °F)

Freezing Point/Melting Point: -65 °C (-85 °F) Melting point.

Flash Point: 83.9 °C (183.02 °F) closed cup

Auto-ignition: 192.85 °C (379.13 °F)

Flammability: Combustible liquid.

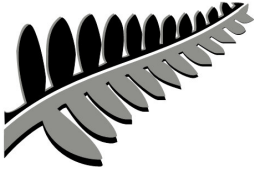
Lower Flammable Limit: 1.38 vol%

Upper Flammable Limit: 22.7 vol%

Explosive Properties: No Data Available.

Oxidizing Properties: No Data Available.

Vapor Pressure: 0.2 mm Hg @ 20 °C (68 °F)



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

Evaporation Rate: 0.015 (butyl acetate = 1)

Relative Density: 1.025 @ 20 °C (68 °F)

Relative Vapor Density: 4.1 (Air = 1.0)

Viscosity: ~ 3.89 mPa.s @ 20 °C (68 °F)

Solubility (Water): 100%

Partition Coefficient (Kow): -1.18 (estimated)

Additional Physical and Chemical Properties: No additional information available.

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions. May form peroxides if in contact with air for long periods of time.

Conditions to Avoid

Heat, sparks, open flames and strong oxidizing conditions.

Substances to Avoid

Oxidizers, Acids, Alkalis

Decomposition Products

Carbon oxides (CO, CO₂)

Hazardous Polymerization

Will not occur.

Reactions with Air and Water

May form peroxides in the presence of air.

SECTION 11: TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION

Product Summary

No additional toxicology information is available for this material. (See Component Toxicity Information).

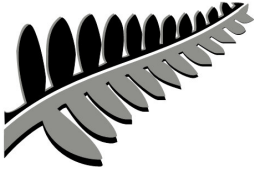
COMPONENT INFORMATION

Diethylene glycol monomethyl ether 111-77-3

Acute Toxicity - Lethal Doses

Rat > 2 GM/M³ 1 HOURS

LD50 (Oral) Rat 9.2 G/KG



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

Guinea Pig 4.2 G/KG
LD50 (Skin) Rabbit 20.2 G/KG

Reproductive Effects

Laboratory test indicate high doses may cause adverse reproductive effects in rats and mice.

Ethanol, 2-methoxy 109-86-4

Acute Toxicity - Lethal Doses

LC50 (Inhl) Rat 1480 PPM 7 HOURS
LD50 (Oral) Rat 2370 MG/KG
Mouse 2560 MG/KG
LD50 (Skin) Rabbit 1280 MG/KG

Reproductive Effects

Animal studies indicate the potential for reproductive effects in males.

Carcinogenicity

Not listed by IARC, NTP, or OSHA.

SECTION 12: ECOLOGICAL INFORMATION

PRODUCT INFORMATION

Ecotoxicity

This material is highly soluble in water. Limited toxicity tests and models indicate this material should exhibit low toxicity to aquatic organisms. The odor and flavor of this material may attract some wildlife and cause them to consume spilled material.

Environmental Fate and Pathway

This material should biodegrade after an acclimation period, and it is not expected to be environmentally persistent. Due care should be taken to avoid accidental releases to aquatic or terrestrial systems. See component summary.

Persistence and Degradability

Bioaccumulation: This material is highly soluble in water and should not bioaccumulate in aquatic or terrestrial organisms.

COMPONENT INFORMATION

Diethylene glycol monomethyl ether 111-77-3

Ecotoxicity

No Data Available.



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

Environmental Fate and Pathway

Expected to have high mobility in soils. This material is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals. Volatilization from dry soil surfaces is expected. While this material may evaporate into the air from dry soil, it is unlikely to evaporate from moist soil or water.

Persistence and Degradability

Biodegradation: Biodegradable under aerobic conditions.

Bioaccumulation: BCF < 1.0 This material is not expected to bioaccumulate.

Ethanol, 2-methoxy 109-86-4

Ecotoxicity

No Data Available.

Environmental Fate and Pathway

Expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals. It is expected to be poorly adsorbed onto soils or sediments. Volatilization from dry soil surfaces is expected. It will leach into soil. Hydrolysis is not expected to be an important factor in the environmental fate process for this material.

Persistence and Degradability

Biodegradation: This material is expected to be biodegradable.

Bioaccumulation: This material is not expected to bioaccumulate.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of all waste and contaminated equipment in accordance with all applicable federal, state and local health and environmental regulations. Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. The materials resulting from clean-up operations may be hazardous wastes and therefore, subject to specific regulations.

SECTION 14: TRANSPORT INFORMATION

Special Requirements

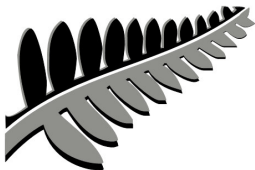
If you reformulate or further process this material, you should consider re-evaluation of the regulatory status of the components listed in the composition section of this sheet, based on final composition of your product.

Proper Shipping Name Combustible liquid, n.o.s. (DIETHYLENE GLYCOL MONOMETHYL ETHER)

ID No. NA1993

Hazard Class Combustible Liquid

PG III



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

Regulatory Status:

<u>Country</u>	<u>Inventory</u>
Australia	AICS X
Canada	DSL X
Canada	NDSL
China	IECS X
European Union	EINECS X
European Union	ELINCS
European Union	NLP
Japan	ENCS X
Korea	ECL X
Philippines	PICCS X
United States	TSCA X

X = All components are included or are otherwise exempt from inclusion on this inventory.

This product contains a substance that is subject to a proposed TSCA Section 5 Significant New Use Rule (SNUR) (70 FR 9902, March 1, 2005). The SNUR requires persons to notify EPA at least 90 days before commencing the manufacture, import, or processing of this chemical substance for domestic use in a consumer product. If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below. Export notification required.

2-methoxyethanol - CASRN 109-86-4 TSCA section 5

SARA 302/304

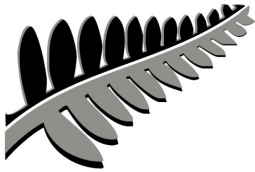
No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

Immediate (Acute) Health Hazard.

Delayed (Chronic) Health Hazard.



SILVER FERN CHEMICAL

Material Safety Data Sheet

GLYCOL ETHER DM

SARA 313

This material contains the following chemicals with known CAS numbers subject to the reporting requirements of SARA Title III, Section 313 and 40 CFR 372:

<u>Component</u>	<u>Reporting Threshold</u>
Diethylene Glycol Monomethyl Ether / CAS # 111-77-3	1.0%
2-Methoxyethanol / CAS# 109-86-4	1.0%

State Reporting

This product contains the following ingredients for which the state of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute:

- 2-Methoxyethanol; developmental toxicity, male reproductive toxicity.

SECTION 16: OTHER INFORMATION

Created: 5/02/2006

Last Updated: 5/02/2006

DISCLAIMER OF RESPONSIBILITY

The information on this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this MSDS information may not be applicable.

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