

ARCOSOLV® DPM
 Foampak Gun Cleaner

SECTION 1: IDENTIFICATION

Product Name: ARCOSOLV® DPM
Product Number: 000000000000499027
Internal ID: 1128
Chemical Family: Propylene Glycol Ethers
CAS Number: 34590-94-8
Chemical Name: Dipropylene Glycol Monomethyl Ether
Synonyms: DPM, Dipropylene Glycol Methyl Ether, DPGME

Manufacturer

Lyondell Chemical Company
 One Houston Center, Suite 1600
 1221 McKinney St.
 P.O. Box 2583
 Houston Texas 77252-2583

Business Contact

Customer Service 888 777-0232
 Product Safety 800 700-0946

24 Hour Emergency Contact

CHEMTREC 800 424-9300
 LYONDELL 800-245-4532

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component Name</u>	<u>CAS #</u>	<u>EU Inventory</u>	<u>Concentration Wt.%*</u>	<u>Risk</u>	<u>Symbol</u>
Dipropylene Glycol Monomethyl Ether	34590-94-8	252-104-2	<= 100.0	None	None

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

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview

This material is HAZARDOUS by OSHA Hazard Communication definition.

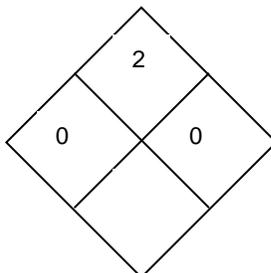
Signal Word

Caution.

Hazards

Moderately combustible liquid. Slight eye irritant.

NFPA®



HMIS®

Health	1
Flammability	2
Reactivity	0

ARCOSOLV® DPM**Physical State**

Liquid.

Color

Clear, colorless.

Odor

Ether-like odor.

Odor Threshold

No value available.

Potential Health Effects**Routes of Exposure**

Eye Skin. Inhalation

Signs and Symptoms of Acute Exposure

See component summary.

- *Dipropylene Glycol Monomethyl Ether 34590-94-8*

Slight eye irritant. Contact may cause mild skin irritation. This material may be absorbed through the skin. Excessive exposures may affect central nervous system (CNS), cause skin irritation and produce anesthetic or narcotic effects.

Skin

No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of skin exposure. No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin absorption exposure.

Inhalation

No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of inhalation exposure.

Eye

May cause minor eye irritation.

Ingestion

No significant signs or symptoms indicative of any health hazard are expected to occur as a result of ingestion.

Chronic Health Effects

See component summary.

- *Dipropylene Glycol Monomethyl Ether 34590-94-8*

May cause dermatitis by defatting the skin from prolonged or repeated contact.

Conditions Aggravated by Exposure

No known conditions are aggravated by this material.

SECTION 4: FIRST AID MEASURES

General

After adequate first aid, no further treatment is required unless symptoms reappear., If you feel unwell, seek medical advice (show the label where possible).

Skin

Remove contaminated clothing as needed. Wash skin thoroughly with mild soap and water. Flush with lukewarm water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if discomfort persists.

Inhalation

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If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

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

If large quantity swallowed, give lukewarm water (pint/ 1/2 litre) if victim completely conscious/alert. Do not induce vomiting. Risk of damage to lungs exceeds poisoning risk. Obtain emergency medical attention.

Note to Physician

Treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIRE FIGHTING MEASURES

Flammable Properties**Classification**

OSHA/NFPA Class III B combustible liquid.

Flash Point:

~ 75 °C (167 °F) (TCC)

Auto-Ignition Temperature

No Data Available.

Lower Flammable Limit

No Data Available.

Upper Flammable Limit

No Data Available.

Extinguishing Media

Suitable: SMALL FIRE: Use dry chemical, CO₂, water spray or regular foam. LARGE FIRE: Use water spray, water fog or regular foam. Do not use straight streams.

Unsuitable: Do not use solid water stream.

Protection of Firefighters

Protective Equipment/Clothing: Wear an approved positive pressure self-contained breathing apparatus and firefighter turnout gear. Structural firefighters protective clothing will only provide limited protection.

Fire Fighting Guidance: Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Flammable vapors may be heavier than air and travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. 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. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Hazardous Combustion Products: Carbon Monoxide and other toxic vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Release Response

Eliminate all sources of ignition. All equipment used when handling this product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or

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confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material.

SECTION 7: HANDLING AND STORAGE**Handling**

For industrial use only. Keep container tightly closed when not in use. The potential for peroxide formation is enhanced when these solvents are used in processes such as distillation. Use only non-sparking tools. Properly ground containers before beginning transfer. When transferring propylene glycol ethers with flash points at or below 60 °C (140 °F) into fixed site vessels, the vessel should be purged and inerted prior to transfer. Propylene glycol ethers may be transferred into air atmospheres if the temperature of the product and the ambient temperature within the shipping container are both at least 16.7 °C (30 °F) less than the product's flash point. After loading, nitrogen blanketing is required if the contents of the transportation container could exceed a temperature of 16.7 °C (30 °F) less than the product flash point during any subsequent transportation activities. If the product flash point is less than 16.7 °C (30 °F) above either the ambient temperature of the transportation container or the storage temperature of the product, the container should be purged and inerted with nitrogen prior to loading and nitrogen blanketed after loading. Handle empty containers with care. Flammable/combustible residue remains after emptying. The purging of all empty shipping containers, regardless of the flashpoint, is recommended when received with air atmospheres. Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair. Use adequate personal protective equipment. Observe precautions pertaining to confined space entry.

Storage

Store only in tightly closed, properly vented containers away from heat, sparks, open flame and strong oxidizing agents. Storage under nitrogen atmosphere is recommended to minimize possible formation of highly reactive peroxides. Store in properly lined steel/stainless steel to avoid slight discoloration from mild steel/copper. Aluminum (5000 series alloys - U.S. Aluminum Association Standard) showed no corrosion after 30 days contact with ARCOSOLV® PM Acetate, ARCOSOLV® DPM, TPM, PTB, or PM at 71°C (160°F). Some plastics/rubbers are attacked by Glycol Ethers/Ether Esters. This product will absorb water if exposed to air.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**Engineering Controls**

Local exhaust in addition to general room ventilation may be required to meet exposure limit(s).

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. If exposure can exceed the occupational exposure limit(s), use approved respiratory protection equipment.

Skin Wear chemical resistant gloves such as: Neoprene. Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn.

Eye Use splash goggles when eye contact due to splashing or spraying liquid is possible.

Additional Remarks

Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse.

Occupational Exposure Limits

Component Name	Source / Date	Value	Type	Notation
Dipropylene Glycol Monomethyl Ether	US (ACGIH) / 2003	100 ppm	8 HRS/TWA	Skin.
	US (ACGIH) / 2003	150 ppm	15 MIN/STEL	Skin.

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US (OSHA) / 2003

100 ppm

8 HRS/TWA

Skin.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid. Clear, colorless.**Odor:** Ether-like odor.**Odor Threshold:** No value available.**pH:** No Data Available.**Boiling Point/Boiling Range:** ~ 180 °C (356 °F) @ 760 mm Hg**Freezing Point/Melting Point:** ~ -80 °C (-112 °F)**Flash Point:** ~ 75 °C (167 °F) (TCC)**Auto-ignition:** No Data Available.**Flammability:** OSHA/NFPA Class IIIB combustible liquid.**Lower Flammable Limit:** No Data Available.**Upper Flammable Limit:** No Data Available.**Explosive Properties:** No Data Available.**Oxidizing Properties:** No Data Available.**Vapor Pressure:** ~ 0.4 mm Hg @ 25 °C (77 °F)**Evaporation Rate:** ~ 0.02 (butyl acetate = 1)**Relative Density:** ~ 0.95 @ 25 °C (77 °F)**Relative Vapor Density:** ~ 5.1 @ 16 - 32 °C (60.8 - 89.6 °F) (Air = 1.0)**Viscosity:** ~ 4 mPa.s @ 25 °C (77 °F) (Brookfield).**Solubility (Water):** Complete (In All Proportions).**Partition Coefficient (Kow):** No Data Available.**Additional Physical and Chemical Properties:** Hygroscopic. Additional properties may be listed in Sections 3 and 5.**SECTION 10: STABILITY AND REACTIVITY**

Chemical Stability

This material is stable when properly handled and stored.

Conditions to Avoid

Extended contact with air or oxygen. The potential for peroxide formation is enhanced when these solvents are used in processes such as distillation. Heat, sparks, open flame, other ignition sources, and oxidizing conditions. Ignition may occur at temperatures below those published in the literature as autoignition or ignition temperatures.

Substances to Avoid

Air or oxygen. Strong oxidizing agents. May react with oxygen to form peroxides. However, there is no known evidence that it has nearly the peroxide forming potential as, for example, diethyl ether, etc.

ARCOSOLV® DPM**Decomposition Products**

Carbon Monoxide and other toxic vapors.

Hazardous Polymerization

Not expected to occur.

Reactions with Air and Water

May react with oxygen to form peroxides.

SECTION 11: TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION

Product Summary

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

COMPONENT INFORMATION

- *Dipropylene Glycol Monomethyl Ether* 34590-94-8

Acute Toxicity - Lethal Doses

<u>LD50 (Oral)</u>	Rat	5220 MG/KG BWT
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<u>LD50 (Skin)</u>	Rabbit	13000 - 14000 MG/KG BWT
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Irritation

Skin Repeated or prolonged contact may cause slight skin irritation. Repeated or prolonged contact with skin may cause dermatitis.

Eye May cause minor eye irritation. Effects of eye irritation are reversible.

Target Organ Effects

No significant hazards.

SECTION 12: ECOLOGICAL INFORMATION

PRODUCT INFORMATION

Ecotoxicity

See component summary.

Environmental Fate and Pathway

See component summary.

COMPONENT INFORMATION

- *Dipropylene Glycol Monomethyl Ether* 34590-94-8

Ecotoxicity

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This material is expected to be non-hazardous to aquatic species.

Acute toxicity to fish

LC50 / 96 HOURS fathead minnow > 10,000 mg/l

Acute toxicity to aquatic invertebrates

EC50 / 48 HOURS daphnia > 5,000 mg/l

Environmental Fate and Pathway

This material is volatile and water soluble. It may enter soil and may contaminate water. This material is likely to evaporate from dry soil but not from water. It is not expected to adsorb onto soils or sediments.

Persistence and Degradability

Biodegradation: This material is expected to be readily biodegradable in acclimated systems. Theo. BOD (Closed Bottle Test) 77 - 84% (28 day)

Bioaccumulation: No relevant studies identified.

SECTION 13: DISPOSAL CONSIDERATIONS

Contaminated product, soil, or water may be hazardous waste due to potential combustibility. Landfill at permitted sites. Use registered transporters. Burn concentrated liquids. Avoid flame-outs. Assure emissions comply with applicable regulations. Dilute aqueous waste will biodegrade. Avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

SECTION 14: TRANSPORT INFORMATION

Special Requirements

Not regulated by U.S. Department of Transportation (USDOT) when shipped in packages of 119 gallons or less. 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

CFR_RAIL	Combustible liquid, n.o.s. (DIPROPYLENE GLYCOL METHYL ETHER)
NON_REG	GLYCOL ETHERS, NOT ELSEWHERE CLASSIFIED (DIPROPYLENE GLYCOL METHYL ETHER)

ID No.	CFR_RAIL	NA1993
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Hazard Class	CFR_RAIL	Combustible Liquid
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PG	CFR_RAIL	III
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SECTION 15: REGULATORY INFORMATION

Regulatory Status

Country	Inventory	
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

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

C = Contact Lyondell/Equistar by e-mail at product.safety@lyondell.com or product.safety@equistarchem.com for additional information.

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United States	TSCA	X	
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If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

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:

Fire Hazard.

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the De Minimis reporting levels established by SARA Title III, Section 313 and 40 CFR 372.

ComponentReporting Threshold**State Reporting**

This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition.

A Volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, 1,1-trichloromethane, methylene chloride, (FC-23), (CFC-113), (CFC-22), (CFC-114), and (CFC-115). By this definition, this is a (VOC) material.

Massachusetts Substances List (MSL) - Hazardous substances on the MSL must be identified when present in materials at levels greater than state specified criterion. The criterion is: $\geq 1\%$. Components with CAS numbers present in this material at a level which could require reporting under the statute are:

- Dipropylene Glycol Monomethyl Ether / CAS# 34590-94-8.

Hazardous Substances listed by the State of Pennsylvania must be identified when present in materials at levels greater than the state specified criterion. The criterion is $\geq 1\%$. Components with CAS numbers in this material at a level which could require reporting under the statute are:

- Dipropylene Glycol Monomethyl Ether / CAS# 34590-94-8.

SECTION 16: OTHER INFORMATION

Latest Revision(s)

Revised Section(s): 3 9 11 15 Date of Revision: February 26 2004

DISCLAIMER OF RESPONSIBILITY

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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.

Numerical Data Presentation

The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg

Language Translations

The information presented in this document has been translated from English by a vendor Lyondell believes to be reliable. Lyondell and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no responsibility for any errors that may have occurred. Please refer to our web sites (www.lyondell.com and www.equistarchem.com) for the original document written in English.

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