

2203



## Material Safety Data Sheet

MSDS No.: BE123  
 Variant: U.S.A.-EN  
 Version No: 1.4  
 Validation Date: 10/10/2005

## ARCOSOLV® TPM

**SECTION 1: IDENTIFICATION**

**Product Name:** ARCOSOLV® TPM  
**Product Number:** 00000000000499280  
**Internal ID:** 4617  
**Chemical Family:** Propylene Glycol Ethers  
**CAS Number:** Mixture



**Chemical Name:** (2-(2-Methoxy methyl ethoxy)Methylethoxy) Propanol

**Synonyms:** Propanol,(2-(2-Methoxymethylethoxy)Methylethoxy), Tripropylene Glycol Methyl Ether

**Manufacturer**  
 Lyondell Chemical Company  
 One Houston Center, Suite 700  
 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>
Tripropylene Glycol Monomethyl Ether	25498-49-1	247-045-4	>= 99.9		

\* 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**

Combustible. May form reactive peroxides. However, there is no known evidence that it has nearly the peroxide forming potential as, for example, diethyl ether, etc. Slight eye irritant. Slight skin irritant. Slight skin absorption hazard. Slight ingestion hazard. May cause central nervous system depression.



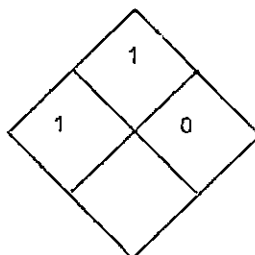


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NFPA®



HMIS®

Health	1
Flammability	1
Reactivity	0

**Physical State**  
Liquid.

**Color**  
Colorless.

**Odor**  
Ether-like odor.

**Odor Threshold**  
No value available.

**Potential Health Effects**

**Signs and Symptoms of Acute Exposure**  
Slight health hazard.

- *Tripropylene Glycol Monomethyl Ether 25498-49-1*  
Not expected to present a significant acute health hazard upon short term exposure.

**Skin**  
May produce skin irritation. Extensive/prolonged or repeated exposure to this material can result in significant absorption.

**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**  
This material may be a slight health hazard if ingested in large quantities.

**Chronic Health Effects**  
See component summary.

- *Tripropylene Glycol Monomethyl Ether 25498-49-1*  
Repeated, prolonged, excessive exposure may result in kidney damage.

**Conditions Aggravated by Exposure**  
This material or its emissions may aggravate existing kidney, urethra, and/or bladder disease.

**SECTION 4: FIRST AID MEASURES**



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**ARCOSOLV® TPM****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 ill effect or irritation develops.

**Inhalation**

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 IIIB combustible liquid.

**Flash Point:**

> 93 °C (199.4 °F) (PMCC)

**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, CO<sub>2</sub>, 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 positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection.





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**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. May travel long distances along the ground before igniting and flashing back to vapor source. Vapors may be heavier than air. 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. Move containers from fire area if you can do it without risk. 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:** Incomplete combustion will form carbon monoxide and other toxic vapors.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

##### Release Response

Eliminate all sources of ignition. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or 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.

#### 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. Store in properly lined steel/stainless steel to avoid slight discoloration from mild steel/copper. Storage under nitrogen atmosphere is recommended to minimize possible formation of highly reactive peroxides. 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

No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

##### 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. The equipment must be cleaned thoroughly after each use.

**Eye** Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact





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due to splashing or spraying liquid, airborne particles, or vapor.

#### 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. Shower after work using plenty of soap and water.

#### Occupational Exposure Limits

Component Name	Source / Date	Value	Type	Notation
Tripropylene Glycol Monomethyl Ether	US (ACGIH) / 2001	N/L		
	US (OSHA) / 2001	N/L		

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Liquid. Colorless.

**Odor:** Ether-like odor.

**Odor Threshold:** No value available.

**pH:** Not applicable.

**Boiling Point/Boiling Range:** ~ 236 °C (456.8 °F) @ 760 mm Hg

**Freezing Point/Melting Point:** ~ -79 °C (-110.2 °F)

**Flash Point:** > 93 °C (199.4 °F) (PMCC)

**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:** < 0.1 mm Hg @ 25 °C (77 °F)

**Evaporation Rate:** < 1 (butyl acetate = 1)

**Relative Density:** ~ 0.96 @ 25 °C (77 °F) (Water = 1.0 at 4°C (39.2°F))

**Relative Vapor Density:** ~ 7.1 @ 15 - 32 °C (59 - 89.6 °F) (Air = 1.0)

**Viscosity:** ~ 6 mm<sup>2</sup>/s @ 25 °C (77 °F) (Brookfield).

**Solubility (Water):** Complete (In All Proportions).

**Partition Coefficient (Kow):** No Data Available.





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**Additional Physical and Chemical Properties:** Hygroscopic. Volatile Characteristics: Negligible: <0.1%  
 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

Strong oxidizing agents. Moisture and humidity. 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.

### 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

See component summary.

#### Acute Toxicity - Lethal Doses

<u>LDLo (Skin)</u>	Rabbit	14,505 MG/KG
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### COMPONENT INFORMATION

- *Tripropylene Glycol Monomethyl Ether* 25498-49-1

#### Acute Toxicity - Lethal Doses

<u>LD50 (Oral)</u>	Rat	3200 MG/KG
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#### Repeated Dose Toxicity

Repeated or prolonged exposure may result in kidney damage.

#### Carcinogenicity

Not listed by IARC, NTP, or OSHA.

## SECTION 12: ECOLOGICAL INFORMATION

### PRODUCT INFORMATION





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#### Ecotoxicity

See component summary.

#### Environmental Fate and Pathway

See component summary.

#### COMPONENT INFORMATION

- *Tripropylene Glycol Monomethyl Ether* 25498-49-1

#### Ecotoxicity

No Data Available.

#### Environmental Fate and Pathway

This material is not volatile but is water soluble.

#### SECTION 13: DISPOSAL CONSIDERATIONS

Contaminated product/soil/water should be considered dangerous due to potential for environmental harm. Landfill solids at permitted sites. Use registered transporters. Burn concentrated liquids. Avoid flame-outs. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade. Avoid overloading/poisoning plant biomass. Assure effluent complies with applicable 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 GLYCOL ETHERS, NOT ELSEWHERE CLASSIFIED

#### SECTION 15: REGULATORY INFORMATION

##### Regulatory Status

Country	Inventory		
Australia	AICS	X	X = All components are included or are otherwise exempt from inclusion on this inventory.
Canada	DSL	X	
Canada	NDSL		
China	IECS	X	C = Contact Lyondell/Equistar by e-mail at <a href="mailto:product.safety@lyondell.com">product.safety@lyondell.com</a> or <a href="mailto:product.safety@equistarchem.com">product.safety@equistarchem.com</a> for additional information.
European Union	EINECS	X	
European Union	ELINCS		
European Union	NLP		
Japan	ENCS	X	
Korea	ECL	X	





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Philippines	PICCS	X	
United States	TSCA	X	

**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:

Delayed (Chronic) Health 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.

**SECTION 16: OTHER INFORMATION****Latest Revision(s)**

Revised Section(s): 3 8 11 12 15 Date of Revision: September 13 2005 Revised Section(s): 2 Date of Revision: 14 January 2002

**DISCLAIMER OF RESPONSIBILITY**

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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](http://www.lyondell.com) and [www.equistarchem.com](http://www.equistarchem.com)) for







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