



Product Safety Assessment

Dipropylene Glycol Methyl Ether Acetate

Select a Topic:

[Names](#)
[Product Overview](#)
[Manufacture of Product](#)
[Product Description](#)
[Product Uses](#)
[Exposure Potential](#)
[Health Information](#)
[Environmental Information](#)
[Physical Hazard Information](#)
[Regulatory Information](#)
[Additional Information](#)
[References](#)

Names

- CAS No. 88917-22-0 (mixed isomers)
- Dipropylene glycol methyl ether acetate
- DPMA
- 1-(2-Methoxymethylethoxy)propanol, acetate
- 2-(2-Methoxymethylethoxy)propanol, acetate
- 1-Methyl-(1-propoxy)-2-propanol, acetate
- 1-((2-Methoxy-1-propoxy)-1-propan-2-ol
- DOWANOL™ DPMA glycol ether acetate

Product Overview

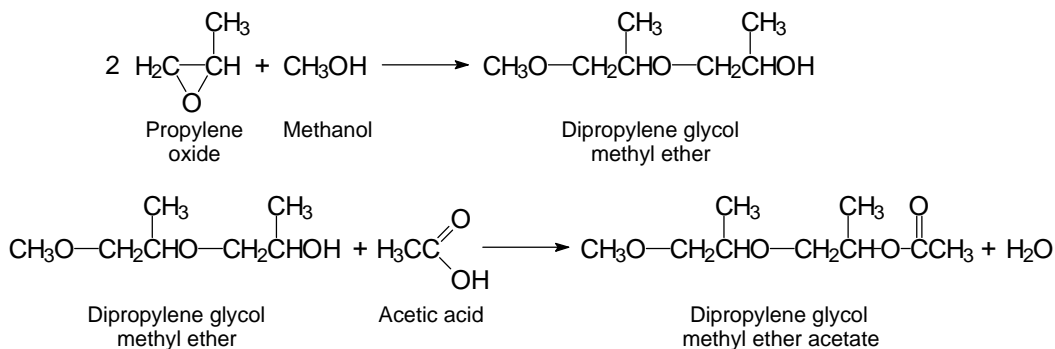
- Dipropylene glycol methyl ether acetate (DPMA) is a colorless to yellow liquid with a sweet odor and moderate evaporation rate. The Dow Chemical Company (“Dow”) markets DPMA and other propylene oxide-based glycol ethers under the trade name DOWANOL glycol ethers.¹ For further details, see [Product Description](#).
- DPMA is an industrial solvent and coalescing agent for automotive paint and coating applications, coil coatings and industrial maintenance coatings, silk-screen inks, and metal finishes.^{2,3} For further details, see [Product Uses](#).
- DPMA is a solvent used for industrial processes. Worker exposure is possible, but consumer exposure is unlikely.⁴ For further details, see [Exposure Potential](#).
- Eye contact with DPMA may cause slight temporary irritation, although corneal injury is unlikely. Prolonged skin contact with DPMA is not likely to cause significant irritation. Prolonged skin contact with very large amounts may cause dizziness or drowsiness. No adverse effects are anticipated from a single inhalation of DPMA vapor.⁵ For further details, see [Health Information](#).
- DPMA is highly biodegradable, unlikely to accumulate in the food chain, and is practically non-toxic to fish and aquatic organisms.
- DPMA liquid and vapor is combustible, and vapors may travel a long distance. Store this material away from ignition sources such as static build-up, heat, spark, or flame. DPMA is stable under recommended storage conditions. DPMA is incompatible with strong acids and strong oxidizers, and contact should be avoided.⁶ For further details, see [Physical Hazard Information](#).

[Back to top](#)

®™ Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow

Manufacture of Product⁷

- **Capacity** – Western Europe is the largest producer and consumer of propylene oxide-based glycol ethers. Dow produces both ethylene oxide- and propylene oxide-based glycol ethers in the United States at facilities in Midland, Michigan and Plaquemine, Louisiana; these products are also produced by a Dow subsidiary in Europe at the Stade, Germany site. Union Carbide Corporation ("UCC"), also a Dow subsidiary, manufactures glycol ethers in Taft, Louisiana, and Seadrift, Texas. The estimated 2007 U.S. production capacity for propylene oxide-based glycol ethers was 191,000 metric tons (420 million pounds).
- **Process** – DPMA is manufactured by reacting acetic acid with dipropylene glycol methyl ether (DPM). DPM is produced by the reacting propylene oxide with methanol using a catalyst.



[Back to top](#)

Product Description^{8,9,10}

Dipropylene glycol methyl ether acetate (DPMA) is a colorless to yellow liquid with a sweet odor and moderate evaporation rate. It is a propylene oxide-based, or P-series, glycol ether acetate. DPMA is a mixture of four structural isomers. Dow markets DPMA and other P-series glycol ethers under the trade name DOWANOL™ glycol ether.

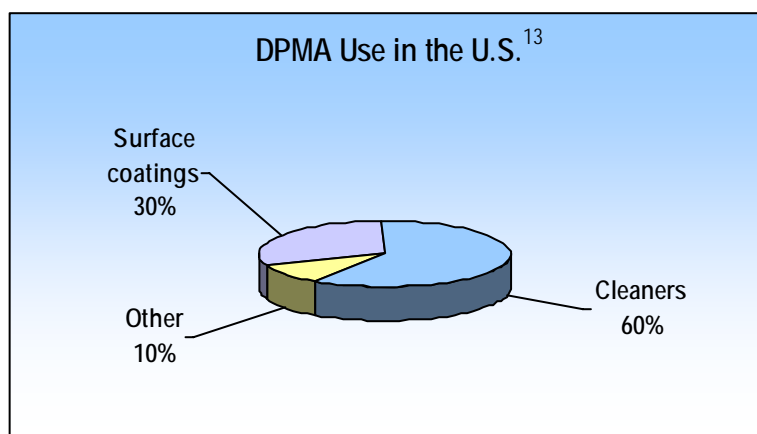
[Back to top](#)

Product Uses^{11,12,13}

DPMA is an industrial solvent and coalescing agent. As a solvent, it dissolves resins that actually form the coatings. Types of resins used for coatings are acrylics, epoxies, alkyds, and polyesters. The solvent is evaporated off leaving a resin film. The main commercial uses for DPMA are:

- **Cleaners** – for industrial and residential uses
- **Coatings** – as a solvent for automotive coatings for topcoats and refinishing (enamel paints and lacquers); industrial maintenance coating (corrosion control); metal coil coating (protective finish); and metal finishes
- **Other** – as a solvent for silk-screen ink (DPMA dissolves printing inks that don't dissolve in water) and other miscellaneous applications

[Back to top](#)



®™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

Exposure Potential

DPMA is used as a solvent in industrial processes. Based on the uses for DPMA, the public could be exposed through:

- **Workplace exposure**¹⁴ – Exposure can occur either in a DPMA manufacturing facility or in the various industrial or manufacturing facilities that use DPMA. Those working with DPMA in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. The most likely route of worker exposure is during coating operations through inhalation or dermal (skin) contact. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit unnecessary exposure. See [Health Information](#).
- **Consumer exposure to products containing DPMA** – DPMA is an industrial solvent. Dow does not sell DPMA for direct consumer use. Consumer contact with DPMA is unlikely. See [Health Information](#).
- **Environmental releases**¹⁵ – DPMA may be released to air by evaporation from cleaners, coatings or other products containing it. However, once DPMA is introduced to water, the compound will tend to remain dissolved because it is highly soluble in water. Because DPMA is highly biodegradable, the compound will be removed by sewage treatment plants.
- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, isolate the area, keeping personnel out of low-lying areas. DPMA vapors are heavier than air and may travel a long distance. Eliminate all sources of ignition immediately to reduce any explosion hazard. Contain the material if possible. Pump the material with explosion-proof equipment. Collect the material and reprocess it or dispose of it according to applicable governmental requirements.
- **In case of fire** – Keep people away and deny any unnecessary entry. Stay upwind. *Do not use* direct water stream; it may spread the fire. Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire-fighting clothing or fight the fire from a safe distance. Use water fog or fine spray, carbon-dioxide or dry-chemical extinguishers, or foam. Follow all emergency procedures carefully. See [Environmental Information](#), [Health Information](#), and [Physical Hazard Information](#).

For more information, see the [Safety Data Sheet](#).

[Back to top](#)

Health Information¹⁶

Eye contact with DPMA may cause slight, temporary irritation, although corneal injury is unlikely. Prolonged skin contact with DPMA is not likely to cause significant irritation. Prolonged skin contact with very large amounts may cause dizziness or drowsiness. DPMA did not cause allergic skin reactions in animal testing. No adverse effects are anticipated from a single inhalation of DPMA vapor. DPMA has very low toxicity if swallowed and harmful effects are not anticipated from swallowing small amounts.

Repeated exposure may cause adaptive liver effects. DPMA did not cause genetic toxicity nor is it expected to cause birth defects.

For specific health information, review the [Safety Data Sheet](#).

[Back to top](#)

Environmental Information¹⁷

DPMA is moderately volatile, and may evaporate from products containing it. However, because it is highly soluble in water, once introduced, it has a tendency to remain in water. It has minimal tendency to bind to soil or sediment.

DPMA is unlikely to persist in the environment. DPMA is highly biodegradable, which suggests the chemical will be removed from water and soil environments, including biological wastewater treatment plants.

DPMA is not likely to accumulate in the food chain (bioconcentration potential is low), and is practically nontoxic to fish and other aquatic organisms on an acute basis.

For additional environmental information, review the [Safety Data Sheet](#).

[Back to top](#)

Physical Hazard Information¹⁸

DPMA, both liquid and vapor, is combustible, and vapors may travel a long distance. Store the material away from ignition sources such as static build-up, heat, spark, or flame. DPMA is stable under recommended storage and use conditions. However, it can decompose at elevated temperatures, releasing flammable vapors. Decomposition products depend upon temperature, air supply, and the presence of other materials. DPMA is incompatible with strong acids and strong oxidizers and contact should be avoided.

During a fire, smoke may contain the original material in addition to toxic or irritating combustion products of varying compositions, which may include and are not limited to carbon monoxide and carbon dioxide. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

For additional physical hazard information, review the [Safety Data Sheet](#).

[Back to top](#)

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of DPMA. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant [Safety Data Sheet](#), [Technical Data Sheet](#), or [Contact Us](#).

[Back to top](#)

Additional Information

- Safety Data Sheet (<http://www.dow.com/webapps/msds/msdssearch.asp>)
- Contact Us (<http://www.dow.com/oxysolvents/contact/index.htm>)
- DOWANOL™ DPMA Glycol Ether Acetate Product Information, The Dow Chemical Company, Form No. 110-00587-0304, March 2004 (http://www.dow.com/PublishedLiterature/dh_0077/0901b8038007743e.pdf?filepath=oxysolvents/pdfs/noreg/110-00587.pdf&fromPage=GetDoc).
- "Propylene Glycol Ethers," *SIDS Initial Assessment Report for 17 SIAM*, Organisation for Economic Co-operation and Development, Arona, Italy, November 11–14, 2003 (<http://www.inchem.org/documents/sids/sids/pges.pdf>)
- "Glycol Ethers," *Marketing Research Report: Chemical Economics Handbook*, SRI Consulting, July 2004

For more business information about DPMA, visit Dow's [Oxygenated Solvents](#) web sites. (<http://www.dow.com/oxysolvents/index.htm> or www.dowanol.com)

[Back to top](#)

®™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

References

- ¹ DOWANOL™ DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, pages 1, 3, and 4.
- ² Dow Oxygenated Solvents website – Applications Center:
(<http://www.dow.com/oxysolvents/app/index.htm>).
- ³ DOWANOL DPMA Glycol Ether Acetate Product Information, The Dow Chemical Company, Form No. 110-00587-0304, March 2004, pages 1–2.
- ⁴ DOWANOL DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, page 3.
- ⁵ DOWANOL DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, pages 1–2 and 4.
- ⁶ DOWANOL DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, pages 1 and 3–4.
- ⁷ Chinn, Henry, “Glycol Ethers,” *Marketing Research Report: Chemical Economics Handbook*, SRI Consulting, July, 2004, pages 5, 15, 18, and 27.
- ⁸ Dow Oxygenated Solvents website – P-Series Glycol Ethers:
(<http://www.dow.com/oxysolvents/prod/pseries.htm>).
- ⁹ DOWANOL™ DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, pages 1, 3, and 4.
- ¹⁰ “Propylene Glycol Ethers,” *SIDS Initial Assessment Report for 17 SIAM*, Organisation for Economic Co-operation and Development, November 11–14, 2003, Arona, Italy, page 8.
- ¹¹ Dow Oxygenated Solvents website – Applications Center:
(<http://www.dow.com/oxysolvents/app/index.htm>).
- ¹² DOWANOL DPMA Glycol Ether Acetate Product Information, The Dow Chemical Company, Form No. 110-00587-0304, March 2004, pages 1–2.
- ¹³ “Propylene Glycol Ethers,” *SIDS Initial Assessment Report for 17 SIAM*, Organisation for Economic Co-operation and Development, November 11–14, 2003, Arona, Italy, pages 12–14.
- ¹⁴ “Propylene Glycol Ethers,” *SIDS Initial Assessment Report for 17 SIAM*, Organisation for Economic Co-operation and Development, November 11–14, 2003, Arona, Italy, pages 6, 17, and 18.
- ¹⁵ DOWANOL DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, pages 2–3.
- ¹⁶ DOWANOL DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, pages 1–2 and 4.
- ¹⁷ DOWANOL DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, page 5.
- ¹⁸ DOWANOL™ DPMA Glycol Ether Acetate Material Safety Data Sheet, The Dow Chemical Company, ID No. 50265/1001, Version 2.0, June 14, 2007, pages 1–4.

[Back to top](#)

NOTICES:

As part of its 2015 Sustainability Goals, Dow has committed to make publicly available safety assessments for its products globally. This product safety assessment is intended to give general information about the chemical (or categories of chemicals) addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the relevant Safety Data Sheet, which should be consulted before use of the chemical. This product safety assessment does not replace required communication documents such as the Safety Data Sheet.

The information herein is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Dow be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information herein or the product to which that information refers.

Nothing contained herein is to be construed as a recommendation to use any product, process, equipment or formulation in conflict with any patent, and Dow makes no representation or warranty, express or implied, that the use thereof will not infringe any patent.

NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Dow makes no commitment to update or correct any information that appears on the Internet or on its World-Wide Web server. The information contained in this document is supplemental to the Internet Disclaimer, <http://www.dow.com/homepage/disclosure.html>

[Back to top](#)

Form No. 233-00407-MM-0508

