Product Safety Assessment

**DALPAD™ A Ethylene Glycol Phenyl Ether**

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. 122-99-6
- Ethylene glycol monophenyl ether
- (2-Hydroxyethoxy)benzene
- DALPAD™ A ethylene glycol phenyl ether
- 2-Hydroxyethyl phenyl ether
- beta-Hydroxyethyl phenyl ether
- 2-Phenoxyethanol
- beta-Phenoxyethanol

**Product Overview**
- DALPAD™ A ethylene glycol phenyl ether is a slow-evaporating, colorless to yellow liquid with a mild odor. It can be used in paints and varnishes, and miscellaneous other uses. It is an ethylene-series (or E-series) aromatic glycol ether and is sold by Dow under the trade name DALPAD A glycol ether. See Product Uses.
- Eye contact may cause moderate irritation or moderate corneal injury. Repeated skin contact may result in absorption of harmful amounts. Swallowing small amounts is unlikely to result in injury. Swallowing large amounts may result in injury. DALPAD A glycol ether is a high boiling liquid with a low vapor pressure, so exposure to vapors is unlikely at room temperature. See Product Description and Health Information.
- Consumer exposure to DALPAD A glycol ether may occur through the use of paints and varnishes. Check product labels for content and ventilation requirements. See Exposure Potential.
- DALPAD A glycol ether is thermally stable at typical storage and use temperatures. It can oxidize at elevated temperatures. Gas generation during decomposition can cause pressure build-up in closed systems. See Physical Hazard information.
- DALPAD A glycol ether is readily biodegradable and has a low potential for bioconcentration. It is practically nontoxic to aquatic organisms. See Environmental Information.

Back to top
Manufacture of Product

- **Capacity** – In 2004, global industry capacity for E-series glycol ethers, including ethylene glycol phenyl ether, was 952,000 metric tons (2,098 million pounds). U.S. consumption of glycol ethers was 309,000 metric tons (682 million pounds). Dow has glycol ether production facilities in the following U.S. locations: Taft and Plaquemine, Louisiana; and Freeport and Seadrift, Texas. Dow also has production facilities in San Lorenzo, Argentina, and Stade, Germany.

- **Process** – DALPAD™ A glycol ether is produced by reacting phenol with ethylene oxide in an alkaline medium, using a continuous closed reactor. The chemical reaction is shown below.

![Chemical Reaction Diagram](image)

Product Description

DALPAD™ A glycol ether is a clear to yellow liquid with a mild odor. It has good coalescing ability, a high polymer solvency, a low evaporation rate, and a wide range of applications.

Product Uses

DALPAD™ A glycol ether is primarily used as a formulation solvent in paints and coatings.

Exposure Potential

DALPAD™ A glycol ether is used in the production of industrial and consumer products. Based on these uses, the public could be exposed through:

- **Workplace exposure** – Exposure can occur either in a glycol ethers manufacturing facility or in the various industrial or manufacturing facilities that use glycol ethers in production. Those working with glycol ethers in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Adequate ventilation should be used to maintain vapor levels below recommended guidelines. Each manufacturing facility should have a thorough training program for employees and appropriate work processes and safety equipment in place to limit unnecessary exposure. See Health Information.

- **Consumer exposure to products containing glycol ethers** – DALPAD A glycol ether may be present in paints and other types of coatings. Read product labels carefully for content. Use safety glasses/goggles and chemically resistant gloves and work in a well-ventilated area when using products that contain DALPAD A glycol ether. Follow product instructions carefully to minimize the risk of exposure. See Health Information.

† Site of Union Carbide Corporation, a wholly owned subsidiary of The Dow Chemical Company
@TM Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow
• **Environmental releases** – In the event of a small spill, absorb glycol ethers with materials such as sand or vermiculite. Collect spillage in suitable and properly labeled containers. Prevent the material from entering soil, ditches, sewers, waterways, and/or groundwater. Use appropriate safety equipment for clean up. See Environmental, Health and Physical Hazard Information.

• **Large release** – Industrial spills or releases are infrequent and are generally contained. If a large spill does occur, the material should be collected in suitable and properly labeled containers and disposed of according to applicable governmental requirements. Spills of glycol ethers on hot fibrous insulation may reduce the autoignition temperature, resulting in the potential for spontaneous combustion. If glycol ethers are present in a fire situation, they can produce carbon monoxide (highly toxic) and carbon dioxide (an asphyxiant at sufficient concentrations). Immediately withdraw all personnel from the area. Water (fog or fine spray) should be used to cool fire-exposed containers and the fire-affected zone until the fire is out and danger of reignition has passed. Firefighting personnel may also use dry-chemical or carbon-dioxide fire extinguishers or foam. Alcohol-resistant foams are preferred. General-purpose synthetic foams or protein foams will be less effective. Fight fire from a protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Do not use a direct water stream, as this may spread the fire. Move containers from the fire area if it is possible to do so without hazard, since containers may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently, may be used as a blanket to extinguish fires. Emergency personnel should wear proper protective equipment, including self-contained breathing apparatus (SCBA), and follow emergency procedures carefully. When relevant in scale or risk, the community should be notified of the hazards associated with the specific release event. See Environmental, Health and Physical Hazard Information.

For more information, see the relevant Safety Data Sheet

---

**Health Information**

Eye contact with DALPAD™ A glycol ether may cause moderate irritation and corneal injury.

Prolonged skin exposure is unlikely to cause significant irritation. A more severe response may result on covered skin (under clothing, gloves). Prolonged skin contact is unlikely to result in absorption of harmful amounts. However, repeated skin contact may result in absorption of harmful amounts.

In animal studies, excessive exposure caused hemolysis (breakage of red blood cells) and secondary effects to the kidneys and liver. Hemolysis impairs the blood's ability to transport oxygen and excessive exposure to DALPAD A glycol ether can aggravate preexisting diseases of the kidneys, liver or blood (like anemia). However, human red blood cells have been shown to be significantly less susceptible to hemolysis than those of the test animals.

At room temperature, vapor exposure is minimal because of this material’s low volatility. However, vapor from heated material may cause eye and nose irritation and cause drowsiness.

DALPAD A glycol ether has a low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. However, swallowing larger amounts may cause injury.

---

©™ Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow
In animal studies, effects from repeated exposure have been reported on the red blood cells, kidney, liver, thyroid, and respiratory tract. DALPAD™ A glycol ether did not cause birth defects or other effects in the fetus, even at doses that caused toxic effects in the mother. Repeated exposures had no effect on reproductive organs. In vitro genetic toxicity and animal genetic toxicity studies were both negative.

For more information, see the relevant Safety Data Sheet

Environmental Information$^{18,19}$
DALPAD™ A glycol ether is readily biodegradable, and its potential for bioconcentration is low. Its potential for mobility in soil is high. It is practically nontoxic to aquatic organisms.

Additional environmental information for ethylene glycol phenyl ether is available in the Ecological and Toxicological Data of DOW Glycol Ethers brochure.

For more information, see the relevant Safety Data Sheet

Physical Hazard Information$^{20}$
DALPAD™ A glycol ether is thermally stable at typical storage and use temperatures, but can oxidize at elevated temperatures. Gas generation during decomposition can cause pressure build-up in closed systems. Do not store DALPAD A glycol ether in aluminum, copper, galvanized-iron, or galvanized-steel containers. Avoid contact with strong acids, bases, and oxidizers. Spills of ethylene glycol phenyl ether on hot fibrous insulation may reduce the autoignition temperature of the material, resulting in the potential for spontaneous combustion.

For more information, see the relevant Safety Data Sheet

Regulatory Information
Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of this material. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet or Contact Us.

Additional Information
- Safety Data Sheet (http://www.dow.com/webapps/msds/msdssearch.asp)
- Ecological and Toxicological Data of DOW Glycol Ethers, The Dow Chemical Company, Form No. 170-00761-0304, March 2004

For more information about this product, visit Dow's Oxygenated Solvents web site: [www.dow.com/oxysolvents](http://www.dow.com/oxysolvents).

References

14. Estimates by The Dow Chemical Company.
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](http://www.dow.com/homepage/disclosure.html)

*Back to top*