



Safety Data Sheet

The Dow Chemical Company

Product Name: CARBOWAX(TM) POLYETHYLENE GLYCOL 1000 **Revision Date:** 2007/12/17
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The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Identification of the substance/preparation and of the company/undertaking

Product Name
CARBOWAX(TM) POLYETHYLENE GLYCOL 1000

Use of the substance/preparation

A partial list of examples include pharmaceutical products, personal care products, automotive products, household products, packaging products, petroleum chemicals, plastics, inks, coatings, adhesives, chemical intermediates, rubber processing, lubricants, metalworking fluids, mold release agents, ceramics, and wood treating. This product has clearances under FDA Food Additive Regulations. It is the responsibility of the user of this product as a Direct or Indirect Food Additive to read and understand all applicable FDA regulations in Title 21 of the Code of Federal regulations as well as any other applicable regulations. CAUTION! For food, feed, drug or cosmetic applications, use CARBOWAX(TM) SENTRY(TM) brands, NF (National Formulary), FCC (Food Chemical Codex) Grade. Only SENTRY brand products are tested to meet NF and FCC standards for these applications.

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
48674 Midland, MI
USA

Customer Information Number: 800-258-2436
For questions about this SDS, contact: SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 00 31 115 69 4982

2. Hazards Identification

This product is not classified as dangerous according to EC criteria.

3. Composition/information on ingredients

Component	Amount	Classification:	CAS #	EC #
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Polyethylene glycol# > 99.0 % Not classified. 25322-68-3 Polymer
Substance(s) with an Occupational Exposure Limit.

4. First-aid measures

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: No emergency medical treatment necessary.

Notes to Physician: Absorption may be promoted by damaged skin. J Pharm Sci. 1985 Oct;74(10):1062-6; Burns Incl Therm Inj 1982 Sep;9(1):49-52. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Container 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. Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. Good housekeeping and controlling of dusts are necessary for safe handling of product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other Precautions: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage

Store in original container. Use product promptly after opening. Avoid prolonged exposure to heat and air. Store in the following material(s): Stainless steel. Polypropylene. Polyethylene-lined container. Teflon. Glass-lined container. Plasite 3066 lined container. Plasite 3070 lined container. 316 stainless steel.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Polyethylene glycol	WEEL	TWA Particulate.	10 mg/m3

Personal Protection

Eye/Face Protection: Use safety glasses. Safety glasses should be consistent with EN 166 or equivalent.

Skin Protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove is recommended to prevent contact with the solid material. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Physical State	Solid
Color	White
Odor	Mild
Flash Point - Closed Cup	177 °C <i>ASTM D93</i>
Flash Point - Open Cup	265 °C <i>ASTM D92</i>
Flammable Limits In Air	Lower: No test data available Upper: No test data available
Autoignition Temperature	No test data available
Vapor Pressure	< 0.01 mmHg @ 20 °C <i>ASTM E1719</i>
Boiling Point (760 mmHg)	> 200 °C <i>Calculated</i> Decomposes.
Vapor Density (air = 1)	>10 <i>Calculated</i>
Specific Gravity (H2O = 1)	1.101 55 °C/55 °C <i>Calculated</i>
Liquid Density	1.111 g/cm ³ @ 37 °C <i>ASTM D4052</i>
Freezing Point	37 - 40 °C <i>ASTM D1177</i>
Melting Point	37 - 40 °C <i>Literature</i>
Solubility in Water (by weight)	80 % @ 20 °C <i>Measured</i>
pH	4.5 - 7.5 <i>ASTM E70</i> (5% aqueous solution)
Molecular Weight	950 - 1050 g/mol <i>Calculated</i>
Kinematic Viscosity	16.0 - 19.0 cSt @ 98.9 °C <i>ASTM D445</i>

10. Stability and Reactivity

Stability/Instability

Thermally stable at typical use temperatures.

Conditions to Avoid: Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Avoid static discharge.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Aldehydes. Carboxylic acids. Polymer fragments.

11. Toxicological Information

Acute Toxicity

Ingestion

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. Typical for this family of materials. Estimated LD₅₀, Rat > 10,000 mg/kg

Eye Contact

May cause slight temporary eye irritation. Corneal injury is unlikely.

Skin Contact

Prolonged exposure not likely to cause significant skin irritation. May cause more severe response if skin is abraded (scratched or cut).

Skin Absorption

Prolonged skin contact is unlikely to result in absorption of harmful amounts. Prolonged/repeated exposure to damaged skin (as in burn patients) may result in absorption of toxic amounts.

Typical for this family of materials. LD50, Rabbit > 20,000 mg/kg

Inhalation

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous.

Repeated Dose Toxicity

Recent findings of kidney failure and death in burn patients, as well as some studies using animal burn models, suggest that polyethylene glycol may have been a factor. The use of topical applications containing this material may not be appropriate in severely burned patients or individuals with impaired renal function. Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Chronic Toxicity and Carcinogenicity

Polyethylene glycols did not cause cancer in long-term animal studies.

Developmental Toxicity

Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity

In animal studies, did not interfere with reproduction.

Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

No bioconcentration is expected because of the relatively high water solubility.

Persistence and Degradability

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

ECOTOXICITY

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (*Pimephales promelas*), 96 h: > 10,000 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea *Daphnia magna*, 48 h: > 10,000 mg/l

Toxicity to Micro-organisms

IC50; bacteria, Growth inhibition, 16 h: > 5,000 mg/l

13. Disposal Considerations

Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.

14. Transport Information

ROAD & RAIL

NOT REGULATED

OCEAN

NOT REGULATED

AIR

NOT REGULATED

INLAND WATERWAYS

NOT REGULATED

15. Regulatory Information

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

European Inventory of Existing Commercial Chemical Substances (EINECS)

This product is a polymer according to the definition in Directive 92/32/EEC (7th Amendment to Directive 67/548/EEC) and all of its starting materials and intentional additives are listed in the European Inventory of Existing Commercial Chemical Substances (EINECS) or in compliance with European (EU) chemical inventory requirements.

EC Classification and User Label Information

This product is not classified as dangerous according to EC criteria.

Safety data sheet available for professional users on request.

16. Other Information

Product Literature

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact. Ask for a product brochure. Additional information on this and other Dow products may be obtained by visiting our web page at www.dow.com.

Revision

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

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