

# DOW CORNING CORPORATION

## Material Safety Data Sheet

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Version: 2.2

Revision Date: 2008/01/02

### MOLYKOTE(R) D 106 ANTI-FRICTION COATING

#### 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Dow Corning Corporation  
South Saginaw Road  
Midland, Michigan 48686

**24 Hour Emergency Telephone: (989) 496-5900**

Customer Service: (989) 496-6000

Product Disposal Information: (989) 496-6315

CHEMTREC: (800) 424-9300

MSDS No.: 02264030

Revision Date: 2008/01/02

Generic Description: Epoxy paint

Physical Form: Liquid

Color: Gray

Odor: Amine-like odor

NFPA Profile: Health 2 Flammability 2 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

#### 2. HAZARDS IDENTIFICATION

##### POTENTIAL HEALTH EFFECTS

##### Acute Effects

- Eye:** Direct contact may cause severe irritation. Vapor may cause eye irritation.
- Skin:** May cause mild irritation.
- Inhalation:** Vapor and/or mist may irritate nose and throat. Vapor overexposure may cause drowsiness.
- Oral:** May cause irritation to the mouth, throat and stomach. Swallowing large amounts may cause drowsiness.

##### Prolonged/Repeated Exposure Effects

- Skin:** Repeated or prolonged exposure may irritate seriously. Overexposure by skin absorption may injure the following organ(s): Blood. Liver. Kidneys.
- Inhalation:** Repeated exposures may cause allergic respiratory reaction. Overexposure by inhalation may injure the following organ(s): Kidneys. Blood. Liver. Nervous system.
- Oral:** Repeated ingestion or swallowing large amounts may injure internally.

##### Signs and Symptoms of Overexposure

No known applicable information.

##### Medical Conditions Aggravated by Exposure

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No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
1317-33-5	15.0 - 40.0	Molybdenum disulfide
111-76-2	5.0 - 10.0	2-Butoxyethanol
7782-42-5	3.0 - 7.0	Graphite
68002-20-0	1.0 - 5.0	Hexamethoxymethylmelamine
108-01-0	1.0 - 5.0	2-Dimethylaminoethanol
78-83-1	<1.0	Isobutyl alcohol

The above components are hazardous as defined in 29 CFR 1910.1200.

**4. FIRST AID MEASURES**

Eye:	Immediately flush with water for 15 minutes. Get medical attention.
Skin:	Remove from skin and immediately flush with water for 15 minutes. Get medical attention if irritation or ill effects develop or persist.
Inhalation:	Remove to fresh air. Get medical attention if ill effects persist.
Oral:	Get medical attention.
Notes to Physician:	Treat according to person's condition and specifics of exposure.

**5. FIRE FIGHTING MEASURES**

Flash Point:	183.2 °F / 84 °C (Tag Closed Cup)
Autoignition Temperature:	Not determined.
Flammability Limits in Air:	Not determined.
Extinguishing Media:	On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO <sub>2</sub> ), dry chemical or water spray. Water can be used to cool fire exposed containers.

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**Fire Fighting Measures:** Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

**Unusual Fire Hazards:** None.

**6. ACCIDENTAL RELEASE MEASURES**

**Containment/Clean up:** Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbant. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

**Note:** See section 8 for Personal Protective Equipment for Spills. Call (989) 496-5900, if additional information is required.

**7. HANDLING AND STORAGE**

Use with adequate ventilation. Avoid eye exposure. Avoid skin contact. Do not breathe vapor, mist, dust, or fumes. Keep container closed. Do not take internally.

Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Keep container closed and away from heat, sparks, and flame.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Component Exposure Limits**

<u>CAS Number</u>	<u>Component Name</u>	<u>Exposure Limits</u>
1317-33-5	Molybdenum disulfide	Observe molybdenum (insoluble compounds) limits. OSHA PEL (final rule): TWA 10 mg/m <sup>3</sup> total dust. ACGIH TLV: TWA 10 mg/m <sup>3</sup> inhalable fraction, 3 mg/m <sup>3</sup> respirable fraction.
111-76-2	2-Butoxyethanol	OSHA PEL-skin (final rule): TWA 50 ppm, 240 mg/m <sup>3</sup> . ACGIH TLV: TWA 20 ppm.

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7782-42-5 Graphite

OSHA PEL (final rule): TWA 15 mg/m<sup>3</sup> total dust, 5 mg/m<sup>3</sup> respirable fraction. ACGIH TLV: TWA 2 mg/m<sup>3</sup> respirable fraction.**Engineering Controls**

Local Ventilation: Recommended.

General Ventilation: Recommended.

**Personal Protective Equipment for Routine Handling**

Eyes: Use chemical worker's goggles.

Skin: Wash at mealtime and end of shift. If skin contact occurs, change contaminated clothing as soon as possible and thoroughly flush affected areas with cool water. Chemical protective gloves are recommended.

Suitable Gloves: Avoid skin contact by implementing good industrial hygiene practices and procedures. Select and use gloves and/or protective clothing to further minimize the potential for skin contact. Consult with your glove and/or personnel protective equipment manufacturer for selection of appropriate compatible materials.

Inhalation: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.

**Personal Protective Equipment for Spills**

Eyes: Use full face respirator.

Skin: Wash at mealtime and end of shift. If skin contact occurs, change contaminated clothing as soon as possible and thoroughly flush affected areas with cool water. Chemical protective gloves are recommended.

Inhalation/Suitable Respirator: Respiratory protection recommended. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MHSA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

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**Precautionary Measures:** Avoid eye exposure. Avoid skin contact. Do not breathe vapor, mist, dust, or fumes. Keep container closed. Do not take internally. Use reasonable care.

**Comments:** When heated to temperatures above 150 C (300 F) in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard and a known skin and respiratory sensitizer. Vapors irritate eyes, nose, and throat. Safe handling conditions may be maintained by keeping vapor conditions within the OSHA permissible exposure limit for formaldehyde.

**Note:** These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical Form: Liquid  
Color: Gray  
Odor: Amine-like odor  
Specific Gravity @ 25°C: 1.2  
Viscosity: 19 s  
Freezing/Melting Point: Not determined.  
Boiling Point: 100 °C  
Vapor Pressure @ 25°C: Not determined.  
Vapor Density: Not determined.  
Solubility in Water: Not determined.  
pH: Not determined.  
Volatile Content: Not determined.  
Flash Point: 183.2 °F / 84 °C (Tag Closed Cup)  
Autoignition Temperature: Not determined.  
Flammability Limits in Air: Not determined.

**Note:** The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

**10. STABILITY AND REACTIVITY**

**Chemical Stability:** Stable.

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**Conditions to Avoid:** None.

**Materials to Avoid:** Oxidizing material can cause a reaction.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Metal oxides. Sulfur oxides. Nitrogen oxides. Carbon oxides and traces of incompletely burned carbon

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compounds. Silicon dioxide. Formaldehyde.

## 11. TOXICOLOGICAL INFORMATION

Component Toxicology Information

2-Butoxyethanol is readily absorbed via the inhalation, dermal and oral routes of exposure, however in vitro and in vivo results indicate that humans are significantly less sensitive to the hemolytic effects of 2-BE than typical laboratory animals such as mice, rats and rabbits.

Special Hazard Information on Components**Sensitizers**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>	
108-01-0	1.0 - 5.0	2-Dimethylaminoethanol	Possible respiratory sensitizer.

## 12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution

Complete information is not yet available.

Environmental Effects

Complete information is not yet available.

Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

## Ecotoxicity Classification Criteria

Hazard Parameters (LC50 or EC50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100
Acute Terrestrial Toxicity	<=100	>100 and <= 2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

## 13. DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40 CFR 261)

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When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

State or local laws may impose additional regulatory requirements regarding disposal. Call (989) 496-6315, if additional information is required.

**14. TRANSPORT INFORMATION****DOT Road Shipment Information (49 CFR 172.101)**

Proper Shipping Name: Combustible liquid, n.o.s.

Hazard Technical Name: Ethylene glycol monobutyl ether / 2-Dimethylaminoethanol

Hazard Class: C

UN/NA Number: NA 1993

Packing Group: III

Hazard Label(s): None

Remarks: Above applies only to containers over 119 gallons or 450 liters.

**Ocean Shipment (IMDG)**

Not subject to IMDG code.

**Air Shipment (IATA)**

Not subject to IATA regulations.

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

**15. REGULATORY INFORMATION**

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

**EPA SARA Title III Chemical Listings****Section 302 Extremely Hazardous Substances (40 CFR 355):**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
50-00-0	0.03	Formaldehyde

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**Section 304 CERCLA Hazardous Substances (40 CFR 302):**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
50-00-0	0.03	Formaldehyde

**Section 311/312 Hazard Class (40 CFR 370):**

Acute: Yes  
Chronic: Yes  
Fire: Yes  
Pressure: No  
Reactive: No

**Section 313 Toxic Chemicals (40 CFR 372):**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
111-76-2	6.6	2-Butoxyethanol

Note: Chemicals are listed under the 313 Toxic Chemicals section only if they meet or exceed a reporting threshold.

**Supplemental State Compliance Information****California**

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>	
50-00-0	<0.1	Formaldehyde	Carcinogenic.

**Massachusetts**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
1317-33-5	15.0 - 40.0	Molybdenum disulfide
111-76-2	5.0 - 10.0	2-Butoxyethanol
7782-42-5	3.0 - 7.0	Graphite
108-01-0	1.0 - 5.0	2-Dimethylaminoethanol
50-00-0	<0.1	Formaldehyde

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## New Jersey

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
7732-18-5	40.0 - 70.0	Water
1317-33-5	15.0 - 40.0	Molybdenum disulfide
None	15.0 - 40.0	Vendor proprietary epoxy ester
111-76-2	5.0 - 10.0	2-Butoxyethanol
7782-42-5	3.0 - 7.0	Graphite
108-01-0	1.0 - 5.0	2-Dimethylaminoethanol

## Pennsylvania

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
7732-18-5	40.0 - 70.0	Water
1317-33-5	15.0 - 40.0	Molybdenum disulfide
None	15.0 - 40.0	Vendor proprietary epoxy ester
111-76-2	5.0 - 10.0	2-Butoxyethanol
7782-42-5	3.0 - 7.0	Graphite
108-01-0	1.0 - 5.0	2-Dimethylaminoethanol
50-00-0	<0.1	Formaldehyde

## 16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

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