

# DOW CORNING CORPORATION

## Material Safety Data Sheet

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Version: 2.1

Revision Date: 2005/09/08

### MOLYKOTE(R) 7409 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.: 01596942

Revision Date: 2005/09/08

Generic Description: Mixture of inorganic and organic compounds  
Physical Form: Liquid  
Color: Gray  
Odor: Aromatic odor

NFPA Profile: Health 2 Flammability 3 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

#### 2. OSHA HAZARDOUS COMPONENTS

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
872-50-4	40.0 - 70.0	N-Methylpyrrolidone
1330-20-7	15.0 - 40.0	Xylene
1317-33-5	15.0 - 40.0	Molybdenum disulfide
100-41-4	7.0 - 13.0	Ethylbenzene
7782-42-5	1.0 - 5.0	Graphite

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

#### 3. HAZARDS IDENTIFICATION

##### POTENTIAL HEALTH EFFECTS

##### Acute Effects

**Eye:** Direct contact may cause severe irritation. Vapor may cause eye irritation.

**Skin:** May cause moderate irritation.

**Inhalation:** Vapor and/or mist may irritate nose and throat. Overexposure by inhalation may cause drowsiness, dizziness, confusion or loss of coordination.

**Oral:** Low ingestion hazard in normal use.

##### Prolonged/Repeated Exposure Effects

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Skin:	Repeated or prolonged exposure may irritate seriously.
Inhalation:	Overexposure by inhalation may injure the following organ(s): Blood. Lungs. Kidneys. Liver. Spleen. Bone marrow. Testes. Thymus. Nervous system.
Oral:	Overexposure by ingestion may injure the following organ(s): Blood. Kidneys. Spleen. Bone marrow. Thymus.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

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.

**4. FIRST AID MEASURES**

Eye:	Immediately flush with water for 15 minutes. Get medical attention.
Skin:	Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.
Inhalation:	Remove to fresh air. Get medical attention if ill effects persist.
Oral:	Get immediate medical attention. Do not induce vomiting.
Comments:	Treat according to person's condition and specifics of exposure.

**5. FIRE FIGHTING MEASURES**

Flash Point:	82.4 °F / 28 °C (Pensky-Martens 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.
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.

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**Unusual Fire Hazards:** Vapors are heavier than air and may travel to a source of ignition and flash back. Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge.

Hazardous Decomposition Products

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

**6. ACCIDENTAL RELEASE MEASURES**

**Containment/Clean up:** Remove possible ignition sources. 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. Traces of benzene (carcinogen) may form if heated in air above 300 F (149 C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements. Avoid eye exposure. Avoid skin contact. Avoid breathing 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>
872-50-4	N-Methylpyrrolidone	AIHA WEEL: TWA 10 ppm, skin.
1330-20-7	Xylene	Observe xylene limits. OSHA PEL (final rule) and ACGIH

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TLV: TWA 100 ppm, STEL 150 ppm.

100-41-4 Ethylbenzene

OSHA PEL (final rule): TWA 100 ppm, 435 mg/m<sup>3</sup>. ACGIH TLV: TWA 100 ppm, STEL 125 ppm.

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: Butyl Rubber. Teflon(R).

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.

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

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Comments: Traces of benzene (carcinogen) may form if heated in air above 300 F (149 C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements.

When heated to temperatures above 150 degrees C in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin, and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations 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: Aromatic odor  
Specific Gravity @ 25°C: 1.1  
Viscosity: 80 cSt

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.

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.

**11. TOXICOLOGICAL INFORMATION****Special Hazard Information on Components****Carcinogens**

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<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>	
100-41-4	7.0 - 13.0	Ethylbenzene	IARC Group 2B - Possibly Carcinogenic to Humans.

**Teratogens**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>	
872-50-4	40.0 - 70.0	N-Methylpyrrolidone	Evidence of teratogenicity (birth defects) in laboratory animals.
100-41-4	7.0 - 13.0	Ethylbenzene	Evidence of teratogenicity (birth defects) in laboratory animals.

**Mutagens**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>	
100-41-4	7.0 - 13.0	Ethylbenzene	Genetically active in IN VIVO assay(s).

**Reproductive Effects**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>	
872-50-4	40.0 - 70.0	N-Methylpyrrolidone	Evidence of reproductive effects in laboratory animals.

**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.

**MOLYKOTE(R) 7409 ANTI-FRICTION COATING****13. DISPOSAL CONSIDERATIONS****RCRA Hazard Class (40 CFR 261)**

When a decision is made to discard this material, as received, is it classified as a hazardous waste? Yes

Characteristic Waste:

Ignitable: D001  
TCLP: D018

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: Flammable liquids, n.o.s.

Hazard Technical Name: Xylene / Ethylbenzene

Hazard Class: 3

UN/NA Number: UN 1993

Packing Group: III

Hazard Label(s): Flammable Liquid

**Ocean Shipment (IMDG)**

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.

Hazard Technical Name: Xylene / Ethylbenzene

Hazard Class: 3

UN/NA Number: UN 1993

Packing Group: III

Hazard Label(s): flammable liquid

**Air Shipment (IATA)**

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

Hazard Technical Name: Xylene / Ethylbenzene

**MOLYKOTE(R) 7409 ANTI-FRICTION COATING**

Hazard Class: 3  
 UN/NA Number: UN 1993  
 Packing Group: III  
 Hazard Class: Flammable Liquid

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):**

None.

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

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
1330-20-7	24.0	Xylene
100-41-4	7.7	Ethylbenzene

**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>
872-50-4	45.0	N-Methylpyrrolidone
1330-20-7	24.0	Xylene
100-41-4	7.7	Ethylbenzene

**Supplemental State Compliance Information**



## MOLYKOTE(R) 7409 ANTI-FRICTION COATING

**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>	
872-50-4	40.0 - 70.0	N-Methylpyrrolidone	Developmental toxin.
100-41-4	7.0 - 13.0	Ethylbenzene	Carcinogenic.

**Massachusetts**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
872-50-4	40.0 - 70.0	N-Methylpyrrolidone
1330-20-7	15.0 - 40.0	Xylene
1317-33-5	15.0 - 40.0	Molybdenum disulfide
100-41-4	7.0 - 13.0	Ethylbenzene
7782-42-5	1.0 - 5.0	Graphite

**New Jersey**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
872-50-4	40.0 - 70.0	N-Methylpyrrolidone
1330-20-7	15.0 - 40.0	Xylene
1317-33-5	15.0 - 40.0	Molybdenum disulfide
100-41-4	7.0 - 13.0	Ethylbenzene
None	5.0 - 10.0	Vendor proprietary ingredient

**Pennsylvania**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
872-50-4	40.0 - 70.0	N-Methylpyrrolidone

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1330-20-7	15.0 - 40.0	Xylene
1317-33-5	15.0 - 40.0	Molybdenum disulfide
100-41-4	7.0 - 13.0	Ethylbenzene
None	5.0 - 10.0	Vendor proprietary ingredient
7782-42-5	1.0 - 5.0	Graphite

**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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