

## MOLYKOTE(R) HP-500 GREASE

[This MSDS is prepared pursuant to the provision of Article 41 of the Industrial Safety and Health Law]

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

<b>1.1 Product Name:</b>	MOLYKOTE(R) HP-500 GREASE
<b>1.2 Manufacturer's Product Code:</b>	01881426
<b>1.3 Chemical Classification:</b>	Organic grease
<b>1.4 Hazard Classification:</b>	Not hazardous.
<b>1.5 Use:</b>	Lubricant
<b>1.6 Company Details:</b>	
<b>Manufacturer/Supplier:</b>	Dow Corning Korea Ltd.
<b>Address:</b>	690-1 Kwanghaewon-ri, Kwanghaewon-myon, Jinchon-kun, Chungbuk, Korea
<b>Telephone Number:</b>	043-539-1114
<b>Emergency Telephone Number:</b>	043-539-1129
<b>Contact Department:</b>	Environmental Health & Safety Team
<b>Contact Person:</b>	Environmental Health & Safety Team Manager
<b>Preparation Department:</b>	Environmental Health & Safety Team

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS No.</u>	<u>% (w/w)</u>	<u>Classification, Risk and Safety Phrases</u>
Perfluoropropene polymer, oxidized	69991-67-9	> 60	Not hazardous.
Polytetrafluoroethylene	9002-84-0	30 - 60	Not hazardous.

## 3. HAZARDS IDENTIFICATION

## 3.1 Emergency Risk and Hazard Information:

Not hazardous.

## 3.2 Possible Health Effects:

Acute

<b>Eyes:</b>	Direct contact may cause mild irritation.
<b>Skin:</b>	No significant irritation expected from a single short-term exposure.
<b>Inhalation:</b>	Irritates respiratory passages very slightly.
<b>Ingestion:</b>	Low ingestion hazard in normal use.

Chronic

<b>Skin:</b>	Repeated or prolonged contact may cause defatting and drying of skin which
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<b>Inhalation:</b>	may result in skin irritation and dermatitis.
<b>Ingestion:</b>	No known applicable information.
<b>3.3 Signs and Symptoms of Overexposure:</b>	Repeated ingestion or swallowing large amounts may injure internally. No significant adverse effects from a single exposure expected from normal use.

## 4. FIRST AID MEASURES

<b>4.1 Eyes:</b>	Immediately flush with water for 15 minutes.
<b>4.2 Skin:</b>	No first aid should be needed.
<b>4.3 Inhalation:</b>	No first aid should be needed.
<b>4.4 Ingestion:</b>	Get medical attention.
<b>4.5 Comments:</b>	Treat according to person's condition and specifics of exposure.
<b>4.6 Note to physicians:</b>	Treat symptomatically. For further information, the medical practitioner should contact Dow Corning Korea Ltd.

## 5. FIRE FIGHTING MEASURES

<b>5.1 Flash Point:</b>	Not applicable.
<b>5.2 Autoignition Temperature:</b>	Not determined.
<b>5.3 Lower Flammability Limit:</b>	Not determined.
<b>5.4 Upper Flammability Limit:</b>	Not determined.
<b>5.5 Fire Service Law Classification:</b>	Not applicable.
<b>5.6 Extinguishing Media:</b>	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.
<b>5.7 Special Fire Fighting Procedures and Equipment:</b>	Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool. Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals.
<b>5.8 Hazardous Combustion Products:</b>	Carbon oxides and traces of incompletely burned carbon compounds. Fluorine compounds. Formaldehyde.
<b>5.9 Unsuitable Extinguishing Media:</b>	None established.

## 6. ACCIDENTAL RELEASE MEASURES

<b>6.1 Personal Precautions:</b>	Avoid skin and eye contact. Do not take internally.
<b>6.2 Environmental Precautions:</b>	Do not allow large quantities to enter drains or surface waters.

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- 6.3 Methods for Cleaning up:** Observe all personal protective equipment recommendations described in this MSDS. If diked material can be pumped, store recovered material in appropriate container. Wipe up or scrape up and contain for salvage or disposal. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. 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 laws and regulations are applicable.

**7. HANDLING AND STORAGE**

- 7.1 Handling Precautions:** Use with adequate ventilation. At temperatures above 482 degrees F/250 degrees C, this material may produce highly toxic gaseous compounds such as hydrogen fluoride and perfluorohydrocarbons. Provide adequate ventilation or use the appropriate respiratory protection, if the possibility of exceeding 482 degrees F/250 degrees C exists. Avoid contamination of tobacco products. Fluoropolymers on tobacco goods may cause adverse health effects by inhalation of the decomposition products. Employees should wash their hands and face before eating, drinking or using tobacco products. Avoid skin and eye contact. Do not take internally. Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.
- 7.2 Storage Conditions:** Use reasonable care and store away from oxidizing materials.

**8. PREVENTIVE MEASURES/PERSONAL PROTECTIVE EQUIPMENT**

- 8.1 Engineering Controls**
- Local Ventilation:** None should be needed.  
**General Ventilation:** Recommended.
- 8.2 Personal Protective Equipment for Routine Handling:**
- Respiratory protection:** No respiratory protection should be needed.
- Suitable Respirator:** None should be needed.
- Eye protection:** Use proper protection - safety glasses as a minimum.
- Hand protection:** No special protection needed.
- Skin protection:** Washing at mealtime and end of shift is adequate.
- Hygiene Measures:** Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.

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## 8.3 Personal Protective Equipment for Spills:

<b>Respiratory protection:</b>	No respiratory protection should be needed.
<b>Eye protection:</b>	Use proper protection - safety glasses as a minimum.
<b>Skin protection:</b>	Washing at mealtime and end of shift is adequate.
<b>Precautionary Measures:</b>	Avoid skin and eye contact. Do not take internally. Use reasonable care.
<b>Comments:</b>	At temperatures above 482 degrees F/250 degrees C, this material may produce highly toxic gaseous compounds such as hydrogen fluoride and perfluorohydrocarbons. Provide adequate ventilation or use the appropriate respiratory protection, if the possibility of exceeding 482 degrees F/250 degrees C exists. Avoid contamination of tobacco products. Fluoropolymers on tobacco goods may cause adverse health effects by inhalation of the decomposition products. Employees should wash their hands and face before eating, drinking or using tobacco products.

## 8.4 Industrial Hygiene Standards:

<u>Ingredients</u>	<u>CAS No.</u>	<u>Exposure Limits</u>
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None known.

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

<b>9.1 Physical Form:</b>	Grease
<b>9.2 Colour:</b>	White
<b>9.3 Odour:</b>	Odorless
<b>9.4 pH:</b>	Not determined.
<b>9.5 Solubility in Water:</b>	Not determined.
<b>9.6 Boiling Point:</b>	Not determined.
<b>9.7 Melting Point:</b>	Not determined.
<b>9.8 Explosive properties:</b>	No
<b>9.9 Oxidizing properties:</b>	No
<b>9.10 Vapor Pressure @ 25°C:</b>	Not determined.
<b>9.11 Specific Gravity:</b>	2.0
<b>9.12 Octanol/water partition coefficient:</b>	Not determined.
<b>9.13 Vapour Density (air=1):</b>	Not determined.
<b>9.14 Viscosity:</b>	Not determined.
<b>9.15 Molecular Weight:</b>	Not determined.

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

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## 10. STABILITY AND REACTIVITY

<b>10.1 Stability:</b>	Stable.
<b>10.2 Reactivity</b>	
<b>Conditions to avoid:</b>	None.
<b>Materials to avoid:</b>	Can react with strong oxidising agents.
<b>Hazardous Decomposition Products:</b>	Carbon oxides and traces of incompletely burned carbon compounds. Fluorine compounds. Formaldehyde.
<b>Hazardous Polymerization</b>	Hazardous polymerization will not occur.
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## 11. TOXICOLOGICAL INFORMATION

<b>11.1 Acute Oral Toxicity:</b>	Refer to section 3.2.
<b>11.2 Acute Dermal Toxicity:</b>	Refer to section 3.2.
<b>11.3 Acute Inhalation Toxicity:</b>	Refer to section 3.2.
<b>11.4 Sub-Acute:</b>	No known applicable information.
<b>11.5 Chronic Effects:</b>	Refer to section 3.2.
<b>11.6 Mutagenic Effects:</b>	None known.
<b>11.7 Reproductive Effects:</b>	None known.
<b>11.8 Carcinogenic Effects:</b>	None known.
<b>11.9 Other Health Hazard Information:</b>	Inhalation of fumes from fire decomposition of polytetrafluoroethylene (Teflon) is known to cause polymer fume fever. Thermal decomposition may produce Hydrogen Fluoride (HF) fumes which are highly toxic.

## 12. EFFECTS ON THE ENVIRONMENT

<b>12.1 Environmental Fate and Distribution:</b>	Solid material, insoluble in water. No adverse effects are predicted.
<b>12.2 Environmental Effects:</b>	No adverse effects on aquatic organisms are predicted.
<b>Bioaccumulation:</b>	No bioaccumulation potential.
<b>12.3 Fate and Effects in Waste Water Treatment Plants:</b>	No adverse effects on bacteria are predicted.

## 13. DISPOSAL CONSIDERATIONS

<b>13.1 Regulatory status under the Waste Management Law:</b>	Product should be disposed of in accordance with Waste Management Law Article 12.
<b>13.2 Product Disposal:</b>	Dispose of in accordance with local regulations.

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**13.3 Packaging Disposal:** Dispose of in accordance with local regulations.

**14. TRANSPORT INFORMATION****14.1 Sea transport (IMDG):**

Not subject to IMDG code.

**14.2 Transportation Precautions:**

Transport in accordance with the relevant regulations. Refer to section 7.2 for further information on transportation requirements. Refer to section 6 for the safety measures to be taken in the event of accidental release.

**14.3 Other International Transportation Regulations****Air Transport (IATA-DGR):**

Not subject to IATA regulations.

**15. REGULATORY INFORMATION****15.1 Classification and labelling in accordance with Industrial Safety and Health Law:**

**Classification:** Not hazardous.

**S-phrases:** Avoid contact with skin and eyes.  
In case of fire and/or explosion do not breathe fumes.  
Use only in well-ventilated areas.

**15.2 Toxic Chemicals Control Act and Other Chemicals Management Regulations:****Chemicals controlled in accordance with Toxic Chemicals Control Law****Toxic Chemicals:**

No subject chemicals

**Observational Chemicals:**

No subject chemicals

**Prohibited Chemicals:**

No subject chemicals

**Restricted Toxic Chemicals:**

No subject chemicals

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No subject chemicals

**15.3 Other International Regulations:****Chemical Inventories:**

<b>TSCA:</b>	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
<b>AICS:</b>	All ingredients listed or exempt.
<b>IECSC:</b>	All ingredients listed or exempt.
<b>MITI:</b>	All components are listed on ENCS or its exempt rule.
<b>KECL:</b>	All ingredients listed, exempt or notified.
<b>EINECS:</b>	All ingredients listed or exempt.
<b>DSL:</b>	Not determined.
<b>PICCS:</b>	Not determined.

**16. OTHER INFORMATION**

Information Source:	Dow Corning Corporation
Prepared by:	Dow Corning Korea Ltd.

This information is offered in good faith as typical values and not as a product specification. No warranty, 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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