

Product Information
Specialty
Lubricants

#11136

DOW CORNING

Dow Corning®
High-Vacuum Grease

FEATURES

- Low volatility to hold deep vacuums
- Resists oxidation
- Nonmelting
- Good thermal stability

COMPOSITION

- Stiff, nonmelting silicone material

Grease designed for sealing and lubricating vacuum and pressure systems

APPLICATIONS

- Seal and lubricate chemical processing equipment
- Lubricate plug valves, control valves, flow meter bearings, ceramic plug cocks and fire extinguisher valves
- Maintain vacuum and pressure systems
- Lubricate water-treating equipment
- Lubricate synthetic rubber gaskets and seals in high-temperature applications
- Lubricate laboratory equipment
- Lubricate O-rings on binoculars and telescopes
- Help prevent fogging of delicate lenses

TYPICAL PROPERTIES

Specification Writers: Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Method	Test	Unit	Result
	Color		Translucent white
ASTM D 217	Penetration, unworked	mm/10	185
	worked 60, max	mm/10	205
	worked 100,000	mm/10	227
	Service Temperature Range ¹	°C (°F)	-40 to 204 (-40 to 400)
Fed Std 791	Bleed, after 24 hr at 200°C (392°F), max	percent	0.05
Fed Std 791	Evaporation, after 24 hr at 199°C (390°F), max	percent	1.1
ASTM D 70,			
ASTM D 1217	Specific Gravity at 25°C (77°F)	g/cc	1.0
ASTM D 2265	Drop Point	°C (°F)	>300 (572)
	Water Spray Off	percent	1.65

¹Estimated service temperature range based on product formulation and laboratory testing. Actual service temperature range is dependent on other factors including the specific application environment.

DESCRIPTION

Dow Corning® High-Vacuum Grease is a stiff, nonmelting silicone lubricating material that maintains its consistency from -40 to 204°C (-40 to 400°F). It is used in applications similar to those for *Dow Corning®* Stopcock Grease, and is the recommended replacement for that product.

Dow Corning High-Vacuum Grease is recommended for vacuums reaching between 1×10^{-5} and 1×10^{-6} mm Hg. It

is recommended that the grease be preconditioned under vacuum and temperature until these limits are reached. For details on attaining higher vacuums, please contact Dow Corning Customer Service at 1-800-248-2481.

LISTINGS/SPECIFICATIONS

- FDA 21 CFR 175.300
- USDA - Approved for incidental food contact in federally inspected meat and poultry plants
- NSF 61

PERFORMANCE DATA

Chemical Resistance

Dow Corning High-Vacuum Grease resists vegetable and mineral oils and common gases. It also resists aqueous solutions of inorganic salts and dilute acids and alkalis.

Securing or including complete information on variables such as pressure, flow velocity, relubrication schedules and valve construction is impractical. For this reason, the suitability of *Dow Corning High-Vacuum Grease* should always be tested before the material is adopted for regular use.

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY CALLING YOUR GLOBAL DOW CORNING CONNECTION.

USABLE LIFE AND STORAGE

When stored under normal warehouse conditions, *Dow Corning High-Vacuum Grease* has a shelf life of 60 months from date of manufacture. Refer to product packaging for "Use By" date.

PACKAGING

Dow Corning High-Vacuum Grease is supplied in 150-g (5.3-oz) tubes and 3.6-kg (8-lb) pails, net weight.

LIMITATIONS

Dow Corning High-Vacuum Grease is not recommended for use:

- In contact with liquid oxygen and should not be used in applications requiring LOX compatibility
- With silicone elastomers
- On surfaces to be painted; paints will not adhere well
- As a lubricant in metal bearings

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

SHIPPING LIMITATIONS

None.

WARRANTY INFORMATION

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that *Dow Corning's* products are safe, effective, and fully satisfactory for the intended end use.

Dow Corning's sole warranty is that the product will meet the *Dow Corning* sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. *Dow Corning* specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless *Dow Corning* provides you with a specific, duly signed endorsement of fitness for use, *Dow Corning* disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.

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DOW CORNING(R) HIGH VACUUM GREASE

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.: 01018817

Revision Date: 2002/01/18

Generic Description: Silicone compound
Physical Form: Viscous Liquid
Color: Translucent white
Odor: Odorless

NFPA Profile: Health 0 Flammability 1 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

2. OSHA HAZARDOUS COMPONENTS

None present. This is not a hazardous material as defined in the OSHA Hazard Communication Standard.

3. EFFECTS OF OVEREXPOSURE

Acute Effects

Eye: Direct contact may cause temporary redness and discomfort.
Skin: No significant irritation expected from a single short-term exposure.
Inhalation: No significant effects expected from a single short-term exposure.
Oral: Low ingestion hazard in normal use.

Prolonged/Repeated Exposure Effects

Skin: No known applicable information.
Inhalation: No known applicable information.
Oral: No known applicable information.

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.

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4. FIRST AID MEASURES

Eye: Immediately flush with water.

Skin: No first aid should be needed.

Inhalation: No first aid should be needed.

Oral: No first aid should be needed.

Comments: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point: 212 °F / 100 °C (Closed Cup)

Autoignition Temperature: Not determined.

Flammability Limits in Air: Not determined.

Extinguishing Media: Carbon dioxide (CO₂). Water spray. Dry chemical. Foam. 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.

Unusual Fire Hazards: None.

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. Silicon dioxide. Formaldehyde.

6. ACCIDENTAL RELEASE MEASURES

Containment/Clean up: Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements. Clean up remaining materials from spill with suitable absorbant. 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 area as appropriate since some silicone materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Observe all personal protection equipment recommendations described in Sections 5 and 8. 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.

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

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7. HANDLING AND STORAGE

Use with adequate ventilation. None. Avoid eye contact.
Use reasonable care and store away from oxidizing materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

There are no components with workplace exposure limits.

Engineering Controls

Local Ventilation: None should be needed.
General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling

Eyes: Use proper protection - safety glasses as a minimum.
Skin: Washing at mealtime and end of shift is adequate.
Suitable Gloves: No special protection needed.
Inhalation: No respiratory protection should be needed.
Suitable Respirator: None should be needed.

Personal Protective Equipment for Spills

Eyes: Use proper protection - safety glasses as a minimum.
Skin: Washing at mealtime and end of shift is adequate.
Inhalation/Suitable Respirator: No respiratory protection should be needed.
Precautionary Measures: Avoid eye contact. Use reasonable care.
Comments: None.

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: Viscous Liquid
Color: Translucent white
Odor: Odorless
Specific Gravity @ 25°C: 1.1

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Viscosity: 2000000 cSt
Freezing/Melting Point: Not determined.
Boiling Point: > 35C/95F
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**Component Toxicology Information**

No known applicable information.

Special Hazard Information on Components

No known applicable information.

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.

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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)

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 Dow Corning Corporate Environmental Management, (989) 496-6315, if additional information is required.

14. TRANSPORT INFORMATION

DOT Road Shipment Information (49 CFR 172.101)

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:

None.

Section 304 CERCLA Hazardous Substances:

None.

Section 312 Hazard Class:

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

DOW CORNING CORPORATION
Material Safety Data Sheet**DOW CORNING(R) HIGH VACUUM GREASE****Section 313 Toxic Chemicals:**

None present or none present in regulated quantities.

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.

None known.

Massachusetts

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
7631-86-9	7.0 - 13.0	Silica, amorphous

New Jersey

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
63148-62-9	> 60.0	Polydimethylsiloxane
7631-86-9	7.0 - 13.0	Silica, amorphous
70131-67-8	7.0 - 13.0	Dimethyl siloxane, hydroxy-terminated

Pennsylvania

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
63148-62-9	> 60.0	Polydimethylsiloxane
7631-86-9	7.0 - 13.0	Silica, amorphous
70131-67-8	7.0 - 13.0	Dimethyl siloxane, hydroxy-terminated

16. OTHER INFORMATION

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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.

(R) indicates Registered Trademark