



**MOLYKOTE®**

FROM DOW CORNING

## **Molykote® Industrial Lubricants**



AV07061

**Greases ● Oils ● Pastes ● Compounds ● Dispersions ● Anti-Friction Coatings**

# Molykote® Maintenance Products

No matter how harsh the environment or how extreme the temperature, you're sure to find a Molykote® brand lubricant worthy of the challenge.

When you specify maintenance products from Dow Corning®, you're specifying the results of more than 60 years of breakthroughs and innovations by a world leader in lubricant technology.

With dedicated global research and development operations on five continents, Molykote brand lubricants from Dow Corning bring you the best in assembly and maintenance technology from around the world. Our knowledgeable sales professionals will help you choose the right lubricating product for your unique maintenance needs.

Dow Corning registers its manufacturing operations to meet the internationally recognized standards of ISO 9002. You can be assured that the products in our assembly and maintenance line are manufactured to provide consistency and exceptionally high performance quality.

For your convenience, these products are readily available through our nationwide network of over 2000 distributor locations, as well as a vast global distribution network.

With superior product technology, registration to international quality standards, a reputation for consistently high quality and an outstanding on-time shipping record, it's easy to understand why Dow Corning has won so many supplier quality awards.

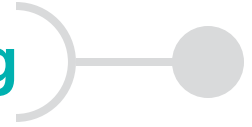
**Select the best.  
Choose Molykote® from Dow Corning.**



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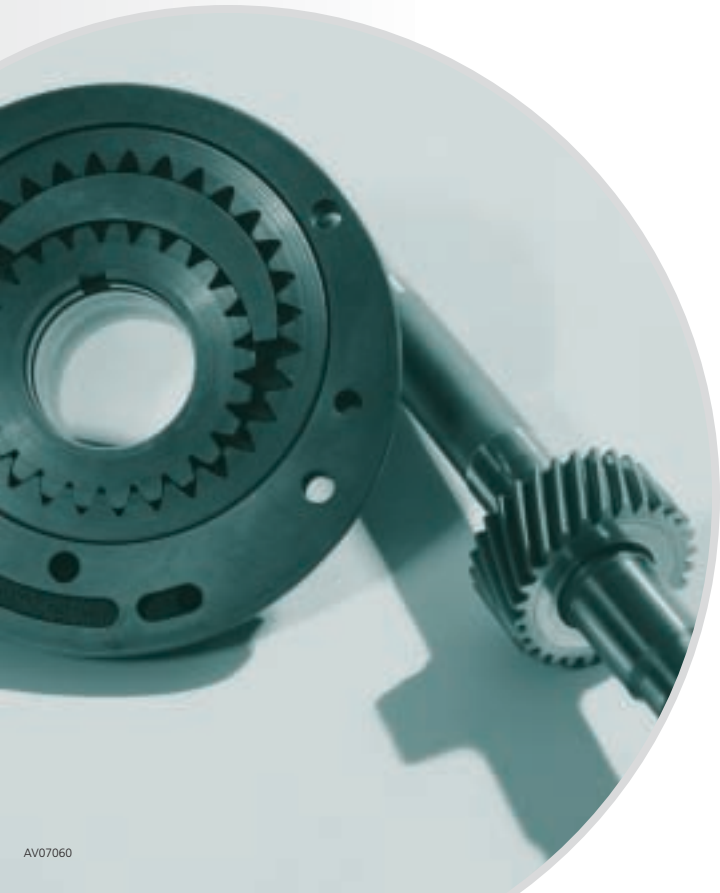
# Molykote® Lubricants from Dow Corning



**Molykote® high-performance lubrications from Dow Corning** help reduce friction and wear, extend lubrication time and reduce maintenance and replacement costs in applications that would defeat conventional oils and greases. Formulated to withstand the rigors of heavy loads, dirty, dusty or chemically harsh environments, temperature and speed extremes, Molykote lubricants are also ideal for normal service lubrication.

To select the best lubricant for your application, let your specific performance needs be your guide:

**Load**  
**Environment**  
**Temperature**  
**Speed**



There are six classes of lubricants from which to choose. Each class has a different physical form with properties that make it suitable for specific applications:

- **Greases** – Solid to semisolid materials consisting of a lubricating fluid, thickening agent and additives. Used on rolling element bearings and other moving parts.
- **High Performance Industrial Lubricating Oils** – Based on hydroprocessed mineral oils or synthetic base stocks such as polyalphaolefin (PAO) and esters, these lubricating fluids are fortified with carefully selected additives to provide optimum performance and service life while maximizing protection of the equipment and machinery they are designed to lubricate.
- **Pastes** – Grease-like materials containing a very high percentage of solid lubricants. Used for assembly and lubrication of highly loaded, slow moving parts for threaded fasteners.
- **Compounds** – Grease-like materials composed of silicone fluids and silica fillers. Used for their sealing, dielectric, non-metal-to-metal lubricating and release properties.
- **Dispersions** – Finely divided solid lubricants suspended in lubricating fluids; preferred when it is necessary to apply solid lubricants in liquid form.
- **Anti-Friction Coatings** – “Lubricating paints”; when applied, these materials cure to form dry, solid lubricant coatings that are bonded to the surface.

Lubricant Types	Lubricating Technology
Greases	MO, PAO, Ester, PIB, Silicone, Fluorosilicone, PFPE, Phenylether
Compounds	Silicone
Pastes	Graphite, MoS <sub>2</sub> , PTFE, Metallic Oxides
Dry-Film Lubricants	Graphite, MoS <sub>2</sub> , PTFE, Silicone Wax
Dispersions & Oils	MO, PAO, Ester, PIB, PAG

## Rolling Element Bearings



Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution
Operation	Metal to metal	-20 to 265	General purpose	Molykote® BR-2 Plus Multi Purpose E.P. Grease
		10 to 285	Wet environments/heavy load	Molykote® G-0102 High Load Bearing Grease
		-50 to 360	Synthetic/combinations of high load, temperature, high speed (to 600,000 Dn) <sup>2</sup>	Molykote® BG 20 High Performance Synthetic Grease
		-40 to 302	Extreme high speeds/ long life/ low noise	Molykote® BG-555 Low Noise Grease
		32 to 320	Water washout resistance/ low speed	Molykote® 1122 Chain and Open Gear Grease
		-20 to 300	"Clean" white/food grade grease in NLGI # 0, 1 or 2	Molykote® G-0050FG, Molykote® G-0051FG, Molykote® G-0052FG
		-60 to 325	Multipurpose synthetic/ food grade	Molykote® G-4500 Multi-Purpose Synthetic Grease
			Multipurpose synthetic/ food grade/NLGI #1	Molykote® G-4501 Multi-Purpose Synthetic Grease
		-40 to 350	Synthetic lubrication/ moderate to high loads	Molykote® G-4700 Extreme Pressure Synthetic Grease
		-100 to 355	Wide temperature range	Molykote® 33 Extreme Low Temp. Bearing Grease
		0 to 550	Extreme high temperatures	Molykote® 41 Extreme High Temp. Bearing Grease
		-40 to 400	High temperatures	Molykote® 44 High Temperature Bearing Grease
			Solvent resistance/high load & temperature/NLGI #2	Molykote® 3451 Chemical Resistant Bearing Grease
	Solvent resistance/NLGI #1	Molykote® 1292 Long Life Bearing Grease		
Storage protection	Metal components	-40 to 150	Corrosion protection/dry film	Molykote® Metal Protective Coating

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

<sup>2</sup>Dn value = shaft size of bearing in mm x RPM.

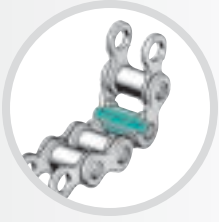
## Valves, Packings, Seals & O-Rings



Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution	
Operation	Metal to rubber/ plastic to rubber	-40 to 400	General purpose sealant, NSF 51 and 61, FDA 21 CFR 175.300	Dow Corning® 111 Valve Lubricant/Sealant	
		-40 to 450	Higher temperatures/consistency	Dow Corning® 112 High Performance Lubricant/Sealant	
		-20 to 450	Solvent resistance	Molykote® 3452 Chemical Resistant Valve Lubricant	
		-40 to 400	Low volatility	Molykote® High-Vacuum Grease	
		-85 to 350	Swell rubber O-rings/ dynamic seals	Molykote® 55 O-Ring Grease	
		-290 to 840	Gate valve riser screws	Molykote® 321 Dry Film Lubricant	
			Plastic to plastic/ plastic to metal	Multipurpose synthetic/ food grade	Molykote® G-4500 Multi-Purpose Synthetic Grease
		-40 to 350	Synthetic lubrication/ moderate to high loads	Molykote® G-4700 Extreme Pressure Synthetic Grease	

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

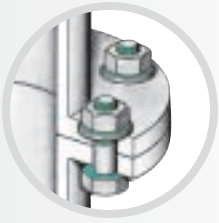
## Chain Drives



Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution
Greased chains	Metal to metal	32 to 320	Water washout resistance/ high speeds	Molykote® 1122 Chain and Open Gear Grease
		-290 to 840	Long-term lubrication	Molykote® 321 Dry Film Lubricant
Oiled chains	Metal to metal	350 to 1000	High-temperature chains/ graphite content	Molykote® 40 High Temperature Chain Lubricant
		0 to 250	Extreme loads/high MoS <sub>2</sub> content	Molykote® M Gear Oil Additive
		200 to 450	High temp/low volatility/no odor	Molykote® L-1428 High Temperature Chain Oil
		-50 to 250	Wide temperature range/PAO/ food grade/tacky	Molykote® L-1468FG Synthetic Freezer Chain Oil
Storage Protection	Metal components	-40 to 150	Corrosion protection/dry film	Molykote® Metal Protective Coating

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

## Threaded Connections



Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution
Pre-assembly	Metal to metal	-40 to 2100 <sup>2</sup>	General purpose	Molykote® 1000 High Temperature Anti-Seize Paste
		-15 to 480 <sup>2</sup>	White product	Molykote® D General Purpose White Paste
		-22 to 572	White/food grade	Molykote® P-1900 Food Grade Assembly Paste
	Aluminum or stainless steel	-20 to 2550 <sup>2</sup>	Noncorroding/extreme temp- erature/sulfur and metal-free	Molykote® P 37 Ultrapure High Temperature Paste
Disassembly Lubricant	Metal to metal	-20 to 120	Loosen rusted parts	Molykote® L-0501 High Performance Penetrating Lubricants
Storage Protection	Metal components	-40 to 150	Corrosion protection/dry film	Molykote® Metal Protective Coating

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

<sup>2</sup>Temperature resistance of solid lubricant portion; base oil effective to 250°F.

## Power Screw Drives



Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution
Operation	Metal to metal	-20 to 265	General purpose	Molykote® BR-2 Plus Multi-Purpose E.P. Grease
		-15 to 480 <sup>2</sup>	White paste	Molykote® D General Purpose White Paste
		-60 to 325	Multipurpose synthetic/ food grade	Molykote® G-4500 Multi-Purpose Synthetic Grease
		-290 to 840	Dusty environments/ extreme pressure	Molykote® 321 Dry Film Lubricant
	Plastic to metal/ plastic to plastic	-100 to 355	Wide temperature range/ long life	Molykote® 33 Extreme Low Temp. Bearing Grease
		-60 to 325	Multipurpose synthetic/ food grade	Molykote® G-4500 Multi-Purpose Synthetic Grease
		-40 to 450	Chemical resistance	Molykote® 3451 Chemical Resistant Bearing Grease
		-40 to 110	Nonstaining/dry film	Molykote® 557 Silicone Dry Film Lubricant
Storage Protection	Metal components	-40 to 150	Corrosion protection/dry film	Molykote® Metal Protective Coating

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

<sup>2</sup>Temperature resistance of solid lubricant portion; base oil effective to 250°F.

## Control Cables



Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution
Operation		-50 to 360	General purpose synthetic	Molykote® BG 20 High Performance Synthetic Grease
		-100 to 355	Wide temperature range/ long range	Molykote® 33 Extreme Low Temp. Bearing Grease
		-40 to 400	High temperatures	Molykote® 44 High Temp. Bearing Grease
		-290 to 840	Dusty environments/ low friction	Molykote® 321 Dry Film Coating
	Metal wire/cable to metal liner	-60 to 325	Multipurpose synthetic/ food grade	Molykote® G-4500 Multi-Purpose Synthetic Grease
Storage Protection	Metal components	-40 to 150	Corrosion protection/dry film	Molykote® Metal Protective Coating

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

## Plain Bearings, Bushings & Sleeves

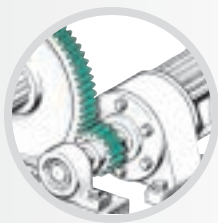


Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution	
Pretreatment	Metal to metal	0 to 750 <sup>2</sup>	Run-in lubricant	Molykote® G-n Metal Assembly Paste/Spray	
		-15 to 480 <sup>2</sup>	"Clean" run-in lubricant	Molykote® D General Purpose White Paste	
		-95 to 390	Solventless run-in coating	Molykote® 7400 Bonded Lubricant	
		-290 to 840	Dusty environments	Molykote® 321 Dry Film Lubricant	
Operation	Metal to metal	-20 to 265	General purpose	Molykote® BR-2 Plus Multi-Purpose E.P. Grease	
		-50 to 360	General purpose synthetic	Molykote® BG 20 High Performance Synthetic Grease	
		-20 to 300	"Clean" white grease/ food grade	Molykote® G-0052FG White E.P. Bearing Grease	
		-15 to 480 <sup>2</sup>	"Clean" white paste	Molykote® D General Purpose White Paste	
		-60 to 325	Multipurpose synthetic/ food grade	Molykote® G-4500 Multi-Purpose Synthetic Grease	
		-40 to 350	Synthetic lubrication/high loads	Molykote® G-4700 Extreme Pressure Synthetic Grease	
		-40 to 450	Chemical/solvent resistance	Molykote® 3451 Chemical Resistant Bearing Grease	
		Plastic/rubber applications	-100 to 355	Wide temperature range	Molykote® 33 Extreme Low Temp. Bearing Grease
			-40 to 450	Solvent resistance	Molykote® 3451 Chemical Resistant Bearing Grease
			-40 to 400	Washout resistance/low speeds	Molykote® 111 Valve Lubricant/Sealant
Storage Protection	Metal components	-40 to 150	Corrosion protection/dry film	Molykote® Metal Protective Coating	

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

<sup>2</sup>Temperature resistance of solid lubricant portion; base oil effective to 250°F.

## Gears

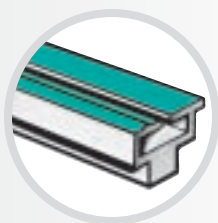


Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution
Pretreatment	Metal to metal gears	0 to 750 <sup>2</sup>	Run-in lubricant	Molykote® G-n Metal Assembly Paste/Spray
Operation	Plastic to plastic/ metal	-60 to 325	Multipurpose synthetic/ food grade	Molykote® G-4500 Multi-Purpose Synthetic Grease
		-40 to 350	Synthetic lubrication/high loads	Molykote® G-4700 Extreme Pressure Synthetic Grease
		32 to 320	Tacky grease	Molykote® 1122 Chain and Open Gear Grease
		-290 to 840	Dusty environments	Molykote® 321 Dry Film Lubricant
		-95 to 480	Heat-cure bonded	Molykote® 106 Bonded Lubricant
		-100 to 355	Wide temperature range/ low friction	Molykote® 33 Extreme Low Temp. Bearing Grease
		-40 to 110	Nonstaining/dry film	Molykote® 557 Silicone Dry Film Lubricant
In Gear Boxes	Metal to metal	0 to 250	Extreme loads/reduce energy	Molykote® M Gear Oil Additive
		-30 to 250	Heavily loaded, slow speed gears/ sulfur-based AW/EP additives	Molykote® L-21XX Series Gear Oils
		-30 to 250	Excellent AW properties/bronze friendly/phosphorus-based AW additives	Molykote® L-11XX Series Gear Oils
		-30 to 250	Synthetic/ food grade	Molykote® L-11XXFG Series Gear Oils
		0 to 190	Mineral Oil/ food grade	Molykote® L-01XXFG Series Gear Oils
Storage Protection	Metal components	-40 to 150	Corrosion protection/dry film	Molykote® Metal Protective Coating

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

<sup>2</sup>Temperature resistance of solid lubricant portion; base oil effective to 250°F.

## Slides, Guides & Tracks



Application	Substrates	Temperature Range, <sup>1</sup> °F	Other Considerations	Molykote® Solution
Operation	Metal to metal	0 to 300	"Clean" white grease/ food grade	Molykote® G-0052FG White E.P. Bearing Grease
		-15 to 480 <sup>2</sup>	"Clean" white paste	Molykote® D General Purpose White Paste
		-22 to 572 <sup>2</sup>	"Clean white paste/food grade	Molykote® P-1900 Food Grade Assembly Paste
		-40 to 2100 <sup>2</sup>	High temperatures	Molykote® 1000 High Temperature Anti-Seize Paste
		0 to 750 <sup>2</sup>	High loads	Molykote® G-n Metal Assembly Paste/Spray
		-60 to 325	Multipurpose synthetic/ moderate loads/food grade	Molykote® G-4500 Multi-Purpose Synthetic Grease
		-40 to 350	Synthetic lubrication/high loads	Molykote® G-4700 Extreme Pressure Synthetic Grease
		-290 to 840	Dusty environments	Molykote® 321 Dry Film Lubricant
		-40 to 110	Aluminum surfaces/nonstaining	Molykote® 557 Silicone Dry Film Lubricant
			Plastic to plastic/ metal	-60 to 325
	Multipurpose synthetic/ food grade/ NLGI #1			Molykote® G-4501 Multi-Purpose Synthetic Grease
-100 to 355	Wide temperature range/ long life			Molykote® 33 Extreme Low Temp. Bearing Grease
Storage Protection	Metal components	-40 to 150	Corrosion protection/dry film	Molykote® Metal Protective Coating

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

<sup>2</sup>Temperature resistance of solid lubricant portion; base oil effective to 250°F.



# Greases

No matter what your industry – Food and Beverage, Chemical, Industrial Assembly – we have the exact products and services to support your business.

A lubricating grease is a semi-solid product of the dispersion of a thickening agent in a liquid lubricant. The lubricating grease operates by releasing the lubricating fluid from the thickening agent and provides a way to supply a lubricant where the use of oil is not practical.

Molykote® high performance greases are designed and tailored for use under extreme conditions like extreme pressure, harsh chemical environment, low and high temperatures and all speeds. Molykote greases are based on mineral oils or synthetic fluids including silicone oils. A number of Molykote greases contain special additives and/or solid lubricants like Molybdenum disulfide to provide effective lubrication



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## Molykote® BR-2 Plus Multi-Purpose EP Grease

- **Primary Use** – General purpose lubricant for plant maintenance in metal-to-metal applications.
- **Special Characteristics** – Heavy duty, extreme pressure lubricant; resists oxidation; good corrosion inhibiting properties; low evaporation and high load-carrying capability at moderate to high speeds.
- **Physical Form** – Black, lithium soap thickened, premium mineral oil grease fortified with MoS<sub>2</sub> and other solid lubricants.
- **Applications** – Lubricating sleeve, ball and roller bearings, vehicle chassis, conveyors, processing equipment, heating and air conditioning fans, garbage disposal and shop equipment.
- **Temperature Range** – From -20 to 265°F (-29 to 129°C).
- **Container Sizes** – Cartridges, pails, kegs and drums.

## Molykote® Longterm 00 Fluid Grease

- **Primary Use** – Fluid grease for lubrication of highly stressed metal gears.
- **Special Characteristics** – Extremely adhesive, good corrosion inhibiting properties, excellent extreme pressure capability.
- **Physical Form** – Black, lithium thickened, mineral oil grease fortified with MoS<sub>2</sub>.
- **Applications** – Enclosed gears subjected to high stress, friction and moisture.
- **Temperature Range** – From -40 to 230°F (-40 to 110°C).
- **Container Sizes** – Tubes, cartridges and pails.

## Molykote® G-0050FG White EP Bearing Grease

- **Primary Use** – Lubricating plain and rolling element bearings in equipment that requires a “clean” grease that may have incidental contact with food. An NLGI#0 version of G-0052 FG.
- **Special Characteristics** – Acceptable under FDA 21 CFR 178.3570 for use in applications with possible incidental food contact and other applications operating under moderate to high loads and speeds.
- **Physical Form** – White, aluminum complex thickened, mineral oil grease fortified with white lubricating solids. NLGI#0 version G-0052FG.
- **Applications** – Grease-lubricated chains, bearings, cycloidal gears and other light to moderately loaded gears; lubricating food processing equipment, filling equipment, rotary kilns. Suitable for use in automatic dispensing systems.
- **Temperature Range** – From -20 to 300°F (-30 to 150°C).
- **Listings/Specifications** – H-1
- **Container Sizes** – Cartridges, pails, kegs and drums.

## Molykote® G-0051FG White EP Bearing Grease

- **Primary Use** – Lubricating plain and rolling element bearings in equipment that requires a “clean” white grease that may have incidental contact with food.
- **Special Characteristics** – Acceptable under FDA 21 CFR 178.3570 for use in applications with possible incidental food contact, and other applications operating under moderate to high loads and speeds.
- **Physical Form** – White, aluminum complex thickened, mineral oil grease fortified with white lubricating solids. NLGI#1 version G-0052FG.
- **Applications** – Grease-lubricated chains, bearings and gears; lubricating food processing equipment, can seamers, filling equipment, rotary kilns. Suitable for use in automatic dispensing systems.
- **Temperature Range** – From -20 to 300°F (-30 to 150°C).
- **Listings/Specifications** – H-1
- **Container Sizes** – Cartridges, pails, kegs and drums.

## Molykote® G-0052FG White EP Bearing Grease

- **Primary Use** – Lubricating plain and rolling element bearings in equipment that requires a “clean” grease that may have incidental contact with food.
- **Special Characteristics** – Acceptable under FDA 21 CFR 178.3570 for use in applications with incidental food contact and other applications operating under moderate to high loads and speeds.
- **Physical Form** – White, aluminum complex thickened, mineral oil grease fortified with white lubricating solids. NLGI#2.
- **Applications** – Grease-lubricated chains, bearings and gears; lubricating food processing equipment, can seamers, filling equipment, rotary kilns.
- **Temperature Range** – From -20 to 300°F (-30 to 150°C).
- **Listings/Specifications** – H-1
- **Container Sizes** – Cartridges, pails, kegs and drums.

## Molykote® G-0010 Bearing Grease

- **Primary Use** – Electric motor bearings, fan bearings.
- **Special Characteristics** – Resists oxidation, good corrosion inhibiting properties; low evaporation.
- **Physical Form** – Blue-Green, polyurea thickened, premium mineral oil grease.
- **Applications** – Lubricating sleeve, ball and roller bearings, electric motors, conveyors, processing equipment, heating and air conditioning fans.
- **Temperature Range** – From -20 to 340°F (-30 to 170°C).
- **Container Sizes** – Cartridges, pails and drums.

## Molykote® G-0101 Long Life Bearing Grease

- **Primary Use** – High speed Rolling element bearing applications.
- **Special Characteristics** – Long service life, good corrosion inhibiting properties, excellent heat resistance.
- **Physical Form** – Yellow-Brown, lithium complex thickened, mineral oil grease.
- **Applications** – Lubricating ball and roller bearings, elevator bearings.
- **Temperature Range** – From -5 to 300°F (-20 to 150°C).
- **Container Sizes** – Cartridges, pails and drums.

## Molykote® G-0102 High Load Bearing Grease

- **Primary Use** – Heavy duty bearing grease for applications in presence of water.
- **Special Characteristics** – Excellent water resistance and thermal stability, good corrosion inhibiting properties, extreme pressure capabilities.
- **Physical Form** – Brown, calcium complex thickened, mineral oil grease fortified with EP additives.
- **Applications** – Roll neck bearings, calandar rolls, watergates and sluices.
- **Temperature Range** – From -10 to 285°F (-25 to 140°C).
- **Container Sizes** – Cartridges, pails and drums.

## Molykote® G-1001 High Performance Bearing Grease

- **Primary Use** – Multi-purpose rolling element bearing grease.
- **Special Characteristics** – Excellent water resistance and thermal stability, good corrosion inhibiting properties, extreme pressure capabilities.
- **Physical Form** – Brown, lithium complex thickened, polyalphaolefin and mineral oil blend grease.
- **Applications** – All kinds of rolling element bearings.
- **Temperature Range** – From -20 to 300°F (-30 to 150°C).
- **Container Sizes** – Cartridges, pails and drums.

## Molykote® G-2001 High Speed Bearing Grease

- **Primary Use** – High speed bearings operating over wide temperature ranges or with exposure to water.
- **Special Characteristics** – Excellent water resistance, good low temperature properties and thermal stability, good corrosion inhibiting properties.
- **Physical Form** – Beige, lithium-calcium thickened, polyalphaolefin (PAO) grease.
- **Applications** – Spindles, fast moving positioners, medium to high speed plastic gears.
- **Temperature Range** – From -60 to 265°F (-50 to 130°C).
- **Container Sizes** – Cartridges, pails and drums.

## Molykote® G-4500 Multi-Purpose Synthetic Grease

- **Primary Use** – Long-term lubrication for moderate loads at higher speeds, especially for incidental food-contact applications or where a white or H-1 grease is preferred.
- **Special Characteristics** – Acceptable under FDA 21 CFR 178.3570 for use in applications with possible incidental food contact and other applications operating under moderate to high loads and speeds. Formulated to provide higher load carrying capacity, greater wear resistance and longer service life compared with conventional petroleum-based lubricants.
- **Physical Form** – Synthetic NLGI#2 grease, consisting of a unique formulation that includes polyalphaolefin (PAO) base oil, aluminum complex thickener and polytetrafluoroethylene (PTFE) as well as other solid lubricants.
- **Applications** – Lubricating mixers, motors, conveyors, low-temperature equipment, packaging machines and many other applications in or out of the food processing industry.
- **Listings/Specifications** – H-1
- **Temperature Range** – From -60 to 325°F (-51 to 163°C).
- **Container Sizes** – Spray, tubes, cartridges, pails, kegs and drums.

## Molykote® G-4501 Multi-Purpose Synthetic Grease

- **Primary Use** – Designed for use in automated lubrication dispensing systems; Long-term lubrication for moderate loads at higher speeds, especially for incidental food-contact applications or where a white or H-1 grease is preferred.
- **Special Characteristics** – Acceptable under FDA 21 CFR 178.3570 for use in applications with possible incidental food contact and other applications operating under moderate to high loads and speeds. Formulated to provide higher load carrying capacity, greater wear resistance and longer service life compared with conventional petroleum-based lubricants.
- **Physical Form** – Synthetic NLGI#1 grease, consisting of a unique formulation that includes polyalphaolefin (PAO) base oil, aluminum complex thickener and polytetrafluoroethylene (PTFE) as well as other solid lubricants.
- **Applications** – Lubricating mixers, motors, conveyors, low-temperature equipment, packaging machines and many other applications in or out of the food processing industry. G-4501 is suitable for use in automatic lubricating systems.
- **Listings/Specifications** – H-1
- **Temperature Range** – From -60 to 325°F (-51 to 163°C).
- **Container Sizes** – Cartridges, pails, kegs and drums.

## Molykote® G-4700 Extreme Pressure Synthetic Grease

- **Primary Use** – Long-term lubrication for heavy loads at moderate to low speeds.
- **Special Characteristics** – Formulated to provide higher load carrying capacity, greater wear resistance and longer service life compared with conventional petroleum-based lubricants.
- **Physical Form** – Synthetic NLGI#2 grease, consisting of a unique formulation of polyalphaolefin (PAO) base oil, lithium complex thickener, molybdenum disulfide (MoS<sub>2</sub>) and other fortifiers.
- **Applications** – Lubricating metal working machines, motors, fans, blowers, conveyors, wheel bearings and custom machinery in non-food-related applications where heavy duty, long-lasting lubrication is desired.
- **Listings/Specifications** – Cincinnati Machine P-64, NLGI GC-LB.
- **Temperature Range** – From -40 to 350°F (-40 to 177°C).
- **Container Sizes** – Cartridges, pails and drums.

## Molykote® BG-20 High Performance Synthetic Bearing Grease

- **Primary Use** – Lubricating bearings operating under a wide range of conditions, including high speeds, high temperatures and high loads.
- **Special Characteristics** – Handles high speed, high load, high temperature combinations. Not intended for lubrication of plastic components.
- **Physical Form** – Beige, lithium complex thickened, polyolester grease.
- **Applications** – Lubricating electric motor bearings, bearings in fans, calendars, presses, generators, driers, spindles, conveyors, index machines, switch contacts.
- **Temperature Range** – From -50 to 360°F (-45 to 182°C).
- **Container Sizes** – Tubes, cartridges, pails and drums.

## Molykote® BG-555 Low Noise Grease

- **Primary Use** – High speed bearings operating over wide temperature ranges or elevated temperatures for extended periods of time.
- **Special Characteristics** – Excellent cold start and low temperature properties and corrosion inhibiting properties.
- **Physical Form** – Beige, lithium thickened, polyol ester (POE) grease. Not intended for lubrication of plastic components.
- **Applications** – Spindles, bearings requiring particle-free, low noise performance.
- **Temperature Range** – From -40 to 300°F (-40 to 150°C).
- **Container Sizes** – Cans and pails.



## Molykote® 1292 Long Life Bearing Grease

- **Primary Use** – For high-temperature use and applications that come in contact with solvents, fuels and water; recommended for rolling element and plain bearings.
- **Special Characteristics** – Light consistency; resists solvents, fuels and moisture; superior performance at high temperatures; moderate to high loads and speeds.
- **Physical Form** – Off-white, polyurea thickened, fluorosilicone grease.
- **Applications** – Lubricating rolling element, plain and sealed-for-life bearings, instrument gears, gaskets, seals and packings, chemical and petroleum processing equipment.<sup>1</sup>
- **Temperature Range** – From -40 to 400°F (-40 to 204°C).
- **Container Sizes** – Tubes, pails, kegs and drums.

## Molykote® 3451 Chemical Resistant Bearing Grease

- **Primary Use** – Lubricating bearings exposed to harsh chemical environments, heavy loads or high temperatures.
- **Special Characteristics** – Resists deterioration by chlorides, solvents, fuels, acids and low-pressure steam and condensate; high load-carrying ability; stable at high temperatures, moderate to high loads and speeds.
- **Physical Form** – White, fluorocarbon thickened, fluorosilicone fluid based grease.
- **Applications** – Lubricating bearings in chemical mixers, pumps, processing equipment, conveyors, fans; sealed-for-life bearings.<sup>1</sup>
- **Temperature Range** – From -40 to 450°F (-40 to 232°C).
- **Listings/Specifications** – H-2. Acceptable for use where there is no possibility of food contact.
- **Container Sizes** – Tubes, cartridges, pails and drums.

## Molykote® 3452 Chemical Resistant Valve Lubricant

- **Primary Use** – Lubricating valves and slow-moving components exposed to harsh chemicals and solvents.
- **Special Characteristics** – Resists deterioration by chlorides, solvents, acids, low-pressure steam and condensate; wide temperature range; high loads; low speeds.
- **Physical Form** – White, fluorocarbon thickened, fluorosilicone fluid based grease.
- **Applications** – Lubricating valves, mechanical seals and packings, rotary and reciprocating shafts, flexible ball joints.<sup>1</sup>
- **Temperature Range** – From -20 to 450°F (-29 to 232°C).
- **Container Sizes** – Tubes, cartridges, pails and drums.

<sup>1</sup>Not recommended for use with highly oxidative chemicals (e.g., liquid chlorine, liquid oxygen).



## Molykote® 33 Extreme Low Temperature Bearing Grease

- **Primary Use** – Lubricant for lightly loaded ball bearings; instrument lubricant; can be used on metal, plastic and rubber parts; especially useful on equipment that must operate over a wide temperature range.
- **Special Characteristics** – Resists oxidation, moisture, corrosive atmospheres; wide service temperature range; good plastic and rubber lubricity.
- **Physical Form** – Off-white, lithium soap thickened, silicone grease.
- **Applications** – Lubricating freezer cart casters, cold room conveyor equipment, electric clock motors, meters, plastic sleeve bearings, air control valves, switch mechanisms.
- **Temperature Range** – From -100 to 400°F (-73 to 204°C).
- **Listings/Specifications** – H-2. Acceptable for use where there is no possibility of food contact.
- **Limitations** – Not recommended for metal-to-metal sliding applications (can be used on metal-to-metal rolling applications).
- **Container Sizes** – Tubes, cartridges, pails, kegs and drums.

## Molykote® 41 Extreme High Temperature Bearing Grease

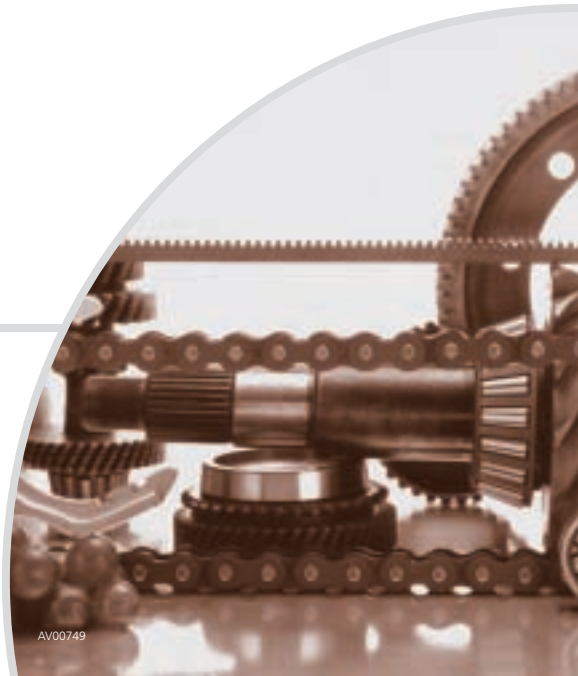
- **Primary Use** – Lubricating ball bearings in high-temperature applications.
- **Special Characteristics** – Heat stable; resists oxidation, moisture, corrosive atmospheres; moderate loads and speeds.
- **Physical Form** – Black, carbon black thickened silicone grease.
- **Applications** – Lubricating high-temperature conveyor equipment, plywood drying ovens, industrial ovens and boilers, steam turbine controls, knife-type electric power disconnect switches; power insulator ball-and-socket connections.
- **Temperature Range** – From 0 to 550°F (-18 to 288°C).
- **Limitations** – Should not be used with highly loaded ferrous metal bearing combinations, especially where sliding friction is encountered or at high speeds.
- **Container Sizes** – Tubes, cartridges, pails and drums.

## Molykote® 44 High Temperature Bearing Grease

- **Primary Use** – Lubricating antifriction bearings, plastic and rubber parts under light to moderate loads; designed to give long service life in high-temperature bearings.
- **Special Characteristics** – Resists oxidation, moisture; wide service temperature range; excellent lubricant for plastic components; low to moderate loads; moderate to high speeds.
- **Physical Form** – Off-white, lithium soap thickened, silicone grease.
- **Applications** – Lubricating motor bearings on appliances, ball bearings in electric motors, kiln preheater fans, oven fans, textile slashers and driers, conveyor systems.
- **Temperature Range** – From -40 to 400°F (-40 to 204°C).
- **Limitations** – Not recommended for high load situations.
- **Container Sizes** – Tubes, cartridges, pails and drums.

## Molykote® 55 O-Ring Grease

- **Primary Use** – Dynamic lubrication between rubber and metal parts, especially in pneumatic systems.
- **Special Characteristics** – Slightly swells O-rings to provide a tight seal; wide service temperature range; resists oxidation.
- **Physical Form** – Off-white, lithium soap thickened, silicone grease.
- **Applications** – Lubricating O-rings; sealing pneumatic systems, aircraft.
- **Temperature Range** – From -85 to 350°F (-65 to 177°C).
- **Limitations** – Not recommended for lubricating silicone rubber O-rings and seals; test before using on plastics; may attack polycarbonate and other plastics; not designed for lubricating bearings.
- **Container Sizes** – Tubes, pails and drums.



## Molykote® 1122 Chain and Open Gear Grease

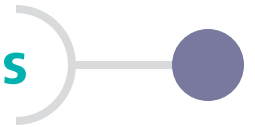
- **Primary Use** – Lubricating chains, gear drives, worm gears, slow-moving bearings.
- **Special Characteristics** – Resists water, steam and high temperatures; contains MoS<sub>2</sub> and graphite for high loads and low speeds.
- **Physical Form** – Thick, black, tacky synthetic grease containing MoS<sub>2</sub> and graphite.
- **Applications** – Lubricating open gears and chains at high speeds; slow-moving bearings, especially those exposed to water and/or steam attack.
- **Temperature Range** – From 32 to 320°F (0 to 160°C).
- **Listings/Specifications** – H-2. Acceptable for use where there is no possibility of food contact.
- **Container Sizes** – Spray, tubes and kegs.

## Molykote® G-6000 High Temperature Bearing Grease

- **Primary Use** – Bearings operating at high temperatures.
- **Special Characteristics** – Good low temperature properties and high mechanical stability.
- **Physical Form** – Light brown, polyurea thickened, phenylether grease.
- **Applications** – Bearing applications involving high mechanical shear, radiation or high temperatures.
- **Temperature Range** – From -40 to 395°F (-40 to 200°C).
- **Container Sizes** – Cartridges, pails and drums.



# High Performance Industrial Lubricating Oils



Molykote® synthetic oils are produced through chemical synthesis to meet targeted performance specifications and to minimize impurities. Synthetic oils are formulated with new generation performance-enhancing additives. Molykote mineral oils are produced in a series of proprietary hydroprocessing steps, which ensures that they are nearly free of contaminants. Synthetic blends are comprised of synthetic and hydroprocessed mineral oil base stocks.

All oils in this section are available in pails and drums.



## Hydraulic Oils

Molykote® hydraulic oils minimize formation of emulsions in contact with water due to the purity of the base fluid. They will generally perform successfully in hydraulic systems far longer than conventional hydraulic oils. Plants can gain significant savings from reduced oil consumption, reduced disposal cost, labor savings and fewer interruptions to production. These non-toxic oils are derived from hydrocracked or synthetic base stocks and can be used in systems designed for low pour point or high flash point mineral oils.

## Compressor and Vacuum Pump Oils

Molykote® compressor and pump fluids are formulated to meet or exceed the performance of comparable OEM fill products. With the exception of L-3232 and L-3246, these fluids are all compatible with mineral oils and systems designed for mineral oil lubrication. Dow Corning can perform oil analysis to ensure that the right product is used for each application and that product life is maximized.

## Special Purpose Oils

Molykote® special purpose oils have been designed for unique purposes or applications within industrial processes. Depending on the application, your Dow Corning representative can help select the right oil for your special requirements.

Molykote® Process Gas Oils have been specially formulated for use in chemical process gas streams consisting of <2% oxygen and consisting of harsh corrosive gasses such as HCl, HBr or methyl chloride. These oils will not form sludge or gel in the presence of many harsh gas streams that would destroy conventional vacuum pump or compressor lubricants. A special corrosion inhibitor inhibits acidic corrosion.

## Multi-purpose Oils

Molykote® multi-purpose oils provide protection and lubrication for a wide range of moving components in industrial systems. Depending on the application, your Dow Corning representative can help select the right oil from a range of viscosities, additive packages and pour points.

## Gearbox and Chain Oils

Molykote® gearbox and chain lubricants help prevent wear and process interruptions in power transmission systems and components. Compared to conventional oils they also offer greater resistance to oxidation and stable performance at high temperatures and under high loads. Molykote gearbox oils maximize fill intervals and maintain viscosity characteristics at wide temperature ranges. Molykote gearbox oils meet AGMA 9005-E02. In addition to AGMA, Molykote L-21XX series gearbox oils also meet DIN 51 517 Part 3, US Steel 224, Flender, Cincinnati Machine, David Brown SL.53.101.

<b>Molykote® Hydraulic Oils<sup>1</sup></b>	<b>ISO Grade</b>	<b>NSF</b>	<b>Base Oil</b>	<b>Additive Package</b>	<b>Viscosity at 40°C (cSt)</b>	<b>Viscosity at 100°C (cSt)</b>	<b>Viscosity at 100°F (cSt)</b>	<b>Viscosity at 210°F (cSt)</b>	<b>Viscosity Index ASTM D2270</b>
L-0532FG Multi Purpose Light Oil	32	H-1	MO	R&O+AW	31.2	5.3	34.3	5.4	103
L-0346 Hydraulic Oil	46	H-2	MO	R&O+AW	45	6.6	49.9	6.8	105
L-0346FG Hydraulic Oil	46	H-1	MO	R&O+AW	44.5	6.6	49	6.7	100
L-1346FG Synthetic Blend Hydraulic Oil	46	H-1	PAO/MO	R&O+AW	44.7	7.4	49.2	7.6	131
L-1368FG Synthetic Blend Hydraulic Oil	46	H-1	PAO/MO	R&O+AW	68.2	10.3	75.6	10.5	138
L-0368FG Hydraulic Oil	68	H-1	MO	R&O+AW	66	8.3	73.9	8.6	100
L-0568 Multi Purpose Oil	68	H-2	MO	R&O+AW+T	68.5	9.2	76.3	9.4	110
L-0510 Multi Purpose Oil	100	H-2	MO	R&O+AW	103	11.8	104	12.1	95
L-0510FG Multi-Purpose Oil	100	H-1	MO	R&O+AW	105.1	12	118.2	12.3	103

<b>Molykote® Air Compressor Oils<sup>1</sup></b>	<b>ISO Grade</b>	<b>NSF</b>	<b>Base Oil</b>	<b>Additive Package</b>	<b>Viscosity at 40°C (cSt)</b>	<b>Viscosity at 100°C (cSt)</b>	<b>Viscosity at 100°F (cSt)</b>	<b>Viscosity at 210°F (cSt)</b>	<b>Viscosity Index ASTM D2270</b>
L-0246 Rotary Compressor Oil	46	H-2	MO	R&O	46.6	6.8	51.7	7	100
L-1232 Synthetic Compressor Oil	32	H-2	PAO	R&O	30.1	5.7	32.9	5.8	144
L-1232FG Synthetic Compressor Oil	32	H-1	PAO	R&O	30.2	5.7	33	5.8	138
L-1246 Synthetic Compressor Oil	46	H-2	PAO	R&O	44.2	7.7	48.5	7.8	138
L-1246FG Synthetic Compressor Oil	46	H-1	PAO	R&O	47	7.9	51.6	8.1	138
L-1268 Synthetic Compressor Oil	68	H-2	PAO	R&O	62	9	60	9	121
L-1210 Synthetic Compressor Oil	100	H-2	PAO	R&O	98	14	108	14	145
L-3232 Synthetic Compressor Oil	32	H-2	PAG/POE	R&O	39.3	7.9	42.7	8.1	178
L-3246 Synthetic Compressor Oil	46	H-2	PAG/POE	R&O	48.2	9.4	52.4	9.6	183
L-4610 Synthetic Blend Piston Compressor Oil	100	H-2	MO/DE BLEND	R&O+AW	91.7	11.1	103.4	11.4	101
L-4611 Synthetic Reciprocating Compressor Oil	100		DE	R&O	98	9.5	112	9.8	62
L-4646 Synthetic High Temp Compressor Oil	46	H-2	POE	R&O	48.1	7.14	53.3	7.3	111

<b>Molykote® Vacuum Pump Oils<sup>1</sup></b>	<b>ISO Grade</b>	<b>NSF</b>	<b>Base Oil</b>	<b>Additive Package</b>	<b>Viscosity at 40°C (cSt)</b>	<b>Viscosity at 100°C (cSt)</b>	<b>Viscosity at 100°F (cSt)</b>	<b>Viscosity at 210°F (cSt)</b>	<b>Viscosity Index ASTM D2270</b>
L-1668FG Synthetic Blend Vacuum Pump Oil	68	H-1	PAO/MO	R&O	63.1	9	70	9.3	113
L-0610 Vacuum Pump Oil	100	H-2	MO	R&O	106.9	12.4	117.7	12.7	100

<b>Molykote® Ammonia Compressor Oils</b>	<b>ISO Grade</b>	<b>NSF</b>	<b>Base Oil</b>	<b>Additive Package</b>	<b>Viscosity at 40°C (cSt)</b>	<b>Viscosity at 100°C (cSt)</b>	<b>Viscosity at 100°F (cSt)</b>	<b>Viscosity at 210°F (cSt)</b>
L-0660 Para Synthetic Ammonia Ref Comp Oil	68	H-2	Hydrocracked MO	PPD	69	9	77	9
L-0668 Ammonia Refrigeration Compressor Oil	68	H-2	Naphthenic MO	NONE	63	6.72	65.4	6.9

<b>Molykote® Special Purpose Oils<sup>1</sup></b>	<b>ISO Grade</b>	<b>NSF</b>	<b>Base Oil</b>	<b>Additive Package</b>	<b>Viscosity at 40°C (cSt)</b>	<b>Viscosity at 100°C (cSt)</b>	<b>Viscosity at 100°F (cSt)</b>	<b>Viscosity at 210°F (cSt)</b>	<b>Viscosity Index ASTM D2270</b>
L-1605FG Synthetic Barrier Fluid	5	H-1	PAO	NONE	5.3	2	5.6	2	124
L-4640 Synthetic Compressor Flush Fluid	32-46	H-2	DE	R&O	38.6	5.7	42.4	5.8	65
L-0268 Process Gas Oil	68		MO	Corrosion inhib.	68	9	76	9	102
L-1568 Process Gas Oil	68		PAO	Corrosion inhib.	68	10	75	10	140
L-1510 Process Gas Oil	100		PAO	Corrosion inhib.	100	14	111	14	138

Pour Point, °C ASTM D97	Flash Point, C.O.C. °F ASTM D92	Fire Point, C.O.C. °F ASTM D92	Density at 15.6°C g/mL	Corrosion, Copper Strip ASTM D130	Rust Prevention ASTM D665 A,B	Water Separation ASTM D1401	Oxidation Stability ASTM D2893	Foam Test Seq II ASTM D892	TAN ASTM D974
-18	420	445	0.857	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-21	430	445	0.864	1a	Pass	40/40/0 (1)	Pending	<25 ml	0.75
-21	425	440	0.860	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-42	460	545	0.832	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.21
-42	470	565	0.838	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.21
-15	460	485	0.867	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-15	450	480	0.868	1a	Pass	40/40/0 (1)	Pending	<25 ml	0.75
-15	470	495	0.876	1a	Pass	40/40/0 (1)	Pending	<25 ml	0.75
-15	495	540	0.866	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5

Pour Point, °C ASTM D97	Flash Point, C.O.C. °F ASTM D92	Fire Point, C.O.C. °F ASTM D92	Density at 15.6°C g/mL	Corrosion, Copper Strip ASTM D130	Rust Prevention ASTM D665 A,B	Water Separation ASTM D1401	Oxidation Stability ASTM D2893	Foam Test Seq II ASTM D892	TAN ASTM D974
-18	440	450	0.863	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.2
-60	470	520	0.835	1a	Pass	40/40/0 (1)	Pass	0/0	0.14
-60	465	515	0.826	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.4
-57	515	535	0.838	1a	Pass	40/40/0 (1)	Pass	0/0	0.14
-42	475	525	0.829	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.2
-54	520	580	0.84	1a	Pass	40/40/0 (1)	Pass	0/0	0.14
-48	520	550	0.841	1a	Pass	40/40/0 (1)	Pass	0/0	0.14
-48	510	575	0.974	1a	Pass	39/39/2 (30)	Pass	<25 ml	0.2
-45	525	540	0.974	1a	Pass	39/39/2 (30)	Pass	<25 ml	0.2
-15	500	520	0.88	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-28	515	555	0.96	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.2
-42	550	570	0.947	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.2

Pour Point, °C ASTM D97	Flash Point, C.O.C. °F ASTM D92	Fire Point, C.O.C. °F ASTM D92	Density at 15.6°C g/mL	Corrosion, Copper Strip ASTM D130	Rust Prevention ASTM D665 A,B	Water Separation ASTM D1401	Oxidation Stability ASTM D2893	Foam Test Seq II ASTM D892	TAN ASTM D974
-18	445	465	0.856	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.4
-18	500	525	0.867	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.2
Viscosity Index ASTM D2270	Pour Point, °C ASTM D97	Flash Point, C.O.C. °F ASTM D92	Fire Point, C.O.C. °F ASTM D92	Density at 15.6°C g/mL	Corrosion, Copper Strip ASTM D130	Water Separation ASTM D1401	Oxidation Stability ASTM D2893	Foam Test Seq II ASTM D892	TAN ASTM D974
100	-39	440	475	0.87	1b	40/40/0 (1)	Pass	<25 ml	0.2
59	-30	345	360	0.897	1b	40/40/0 (1)		<25 ml	0.1

Pour Point, °C ASTM D97	Flash Point, C.O.C. °F ASTM D92	Fire Point, C.O.C. °F ASTM D92	Density at 15.6°C g/mL	Corrosion, Copper Strip ASTM D130	Rust Prevention ASTM D665 A,B	Water Separation ASTM D1401	Oxidation Stability ASTM D2893	Foam Test Seq II ASTM D892	TAN ASTM D974
-60	320	345	0.8	1b		40/40/0 (1)		<25 ml	0.1
-42	445	520	0.963	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.2
-33	420	470	0.848	1b	n/a	40/40/0 (1)	n/a	<25 ml	0.2
-30	516	567	0.834	1b	n/a	40/40/0 (1)	n/a	<25 ml	0.2
-30	520	572	0.838	1b	n/a	40/40/0 (1)	n/a	<25 ml	0.2

<sup>1</sup>Typical values; not for use in preparing specifications.

<b>Molykote® Multi Purpose Oils<sup>1</sup></b>	<b>ISO Grade</b>	<b>NSF</b>	<b>Base Oil</b>	<b>Additive Package</b>	<b>Viscosity at 40°C (cSt)</b>	<b>Viscosity at 100°C (cSt)</b>	<b>Viscosity at 100°F (cSt)</b>	<b>Viscosity at 210°F (cSt)</b>	<b>Viscosity Index ASTM D2270</b>
L-0532FG Multi Purpose Light Oil	32	H-1	MO	R&O+AW	31.2	5.3	34.3	5.4	103
L-0568 Multi Purpose Oil	68	H-2	MO	R&O+AW+T	68.5	9.2	76.3	9.4	110
L-0510 Multi Purpose Oil	100	H-2	MO	R&O+AW	103	11.8	104	12.1	95
L-0510FG Multi-Purpose Oil	100	H-1	MO	R&O+AW	105.1	12	118.2	12.3	103

<b>Molykote® Gearbox Oils<sup>1</sup></b>	<b>ISO Grade</b>	<b>NSF</b>	<b>Base Oil</b>	<b>Additive Package</b>	<b>Viscosity at 40°C (cSt)</b>	<b>Viscosity at 100°C (cSt)</b>	<b>Viscosity at 100°F (cSt)</b>	<b>Viscosity at 210°F (cSt)</b>	<b>Viscosity Index ASTM D2270</b>
L-0115 Gear Oil ISO 150	150	H-2	MO	R&O+AW	149.4	14.8	169.3	15.2	100
L-0115FG Gear Oil ISO 150	150	H-1	MO	R&O+AW	150.4	15.4	170.1	15.9	100
L-0122 Gear Oil ISO 220	220	H-2	MO	R&O+AW	223	20.4	265.6	21	101
L-0122FG Gear Oil ISO 220	220	H-1	MO	R&O+AW	219.1	20	249.7	20.7	101
L-0132 Gear Oil ISO 320	320	H-2	MO	R&O+AW	312	31	349.5	31.6	134
L-0146 Gear Oil ISO 460	460	H-2	MO	R&O+AW	456.6	32.8	507.5	33.8	107
L-0146FG Gear Oil ISO 460	460	H-1	MO	R&O+AW	441.1	33.1	507.5	34.2	107
L-0168 Gear Oil ISO 680	680	H-2	MO	R&O+AW	659	42	764	43	105
L-1115 Synthetic Gear Oil ISO 150	150	H-2	PAO	R&O+AW	152	18	171	18	127
L-1115FG Synthetic Gear Oil ISO 150	150	H-1	PAO	R&O+AW	149	17.4	167	17.8	129
L-1122 Synthetic Gear Oil ISO 220	220	H-2	PAO	R&O+AW	222	23	251.8	24	127
L-1122FG Synthetic Gear Oil ISO 220	220	H-1	PAO	R&O+AW	217	24	243	24.7	127
L-1132 Synthetic Gear Oil ISO 320	320	H-2	PAO	R&O+AW	342.5	30.8	388.6	31.8	126
L-1146 Synthetic Gear Oil ISO 460	460	H-2	PAO	R&O+AW	455.2	45.1	512.4	46.5	154
L-1146FG Synthetic Gear Oil ISO 460	460	H-1	PAO	R&O+AW	460.2	39.2	517.3	40.4	147
L-1168 Synthetic Gear Oil ISO 680	680	H-2	PAO	R&O+AW	674	48	772.1	51.2	128
L-2110 Synthetic Gear Oil ISO	100		PAO	R&O+EP	107	13.7	111.4	14.1	138
L-2115 Synthetic Gear Oil ISO	150		PAO	R&O+EP	149	18.2	164.8	18.7	138
L-2122 Synthetic Gear Oil ISO	220		PAO	R&O+EP	224	24.4	243.6	25.1	141
L-2132 Synthetic Gear Oil ISO	320		PAO	R&O+EP	320	33	359.9	34	145
L-2146 Synthetic Gear Oil ISO	460		PAO	R&O+EP	392	38.8	441.6	40	147
L-2168 Synthetic Gear Oil ISO	680		PAO	R&O+EP	667	61.1	784.8	63.1	160

<b>Molykote® Chain Oils<sup>1</sup></b>	<b>ISO Grade</b>	<b>NSF</b>	<b>Base Oil</b>	<b>Additive Package</b>	<b>Viscosity at 40°C (cSt)</b>	<b>Viscosity at 100°C (cSt)</b>	<b>Viscosity at 100°F (cSt)</b>	<b>Viscosity at 210°F (cSt)</b>	<b>Viscosity Index ASTM D2270</b>
L-0460FG Chain Oil	68	H-1	MO	R&O/AW/T/PPD	66	8.3	73.9	8.6	100
L-1468FG Synthetic Freezer Chain Oil	68	H-1	PAO	R&O/AW/T/PPD	65.8	9.8	72.8	10	131
L-1428 High Temperature Chain Oil		H-2	POE/PB	R&O/AW	285	24	327	26	110

**Base Oils Reference**

- DE = Diester
- MO = Mineral Oil
- PAO/MO = Polyalphaolefin/Mineral Oil
- PAG/POE = Polyalkylene Glycol/Polyolester
- PAO = Polyalphaolefin
- PIB = Polyisobutene
- PB = Polybutene

**Additive Package Reference**

- R&O = Rust, oxidation, and corrosion inhibited
- AW = Anti-wear additives; in gear oils, sulfur free
- EP = Sulfur-based extreme pressure additives
- T = Tackifier
- PPD = Pour point depressant



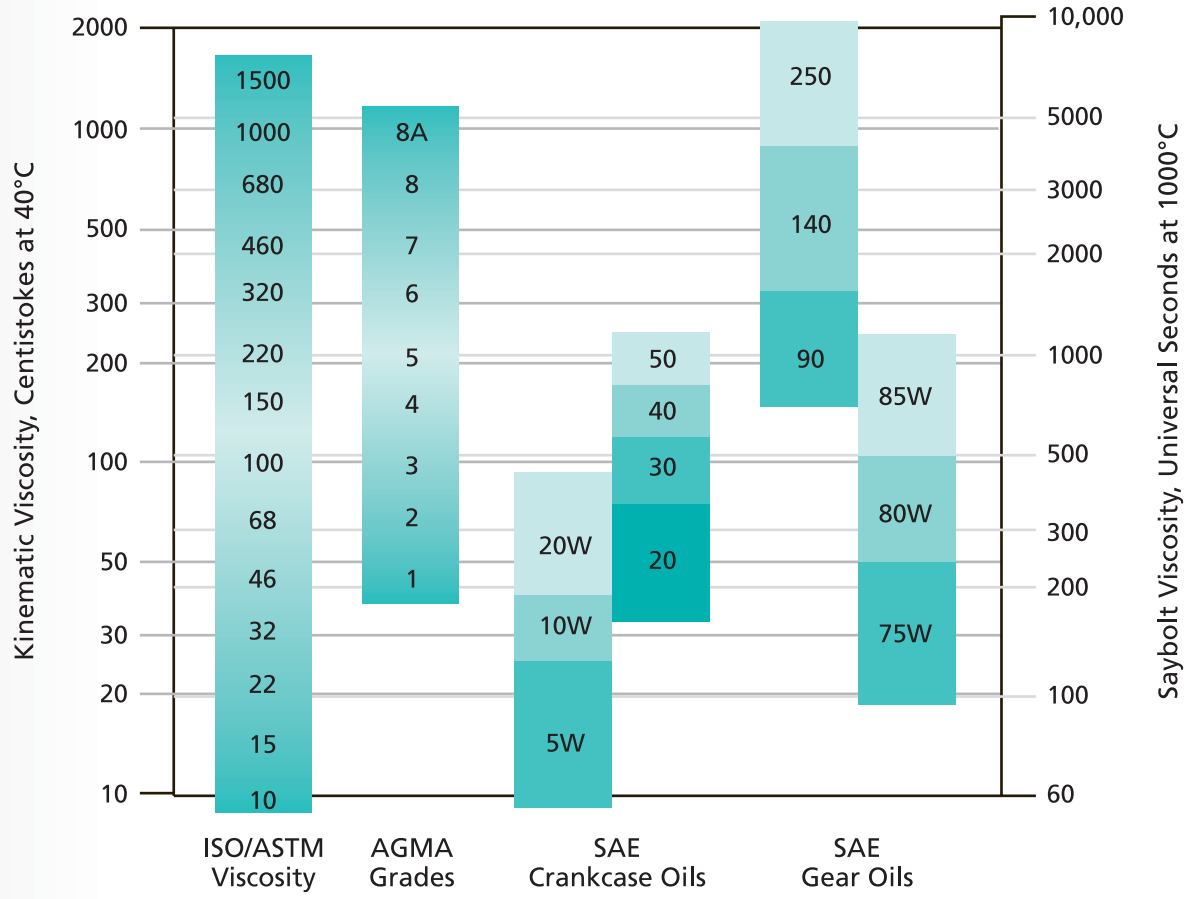
Pour Point, °C ASTM D97	Flash Point, C.O.C. °F ASTM D92	Fire Point, C.O.C. °F ASTM D92	Density at 15.6°C g/mL	Corrosion, Copper Strip ASTM D130	Rust Prevention ASTM D665 A,B	Water Separation ASTM D1401	Oxidation Stability ASTM D2893	Foam Test Seq II ASTM D892	TAN ASTM D974
-18	420	445	0.857	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-15	450	480	0.868	1a	Pass	40/40/0 (1)	Pending	<25 ml	0.75
-15	470	495	0.876	1a	Pass	40/40/0 (1)	Pending	<25 ml	0.75
-15	495	540	0.866	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5

Pour Point, °C ASTM D97	Flash Point, C.O.C. °F ASTM D92	Fire Point, C.O.C. °F ASTM D92	Density at 15.6°C g/mL	FZG ASTM D5182	Corrosion, Copper Strip ASTM D130	Rust Prevention ASTM D665 A,B	Water Separation ASTM D1401	Oxidation Stability ASTM D2893	Foam Test Seq II ASTM D892	TAN ASTM D974
-18	500	530	0.86	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	1.0
-18	500	530	0.86	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-18	510	550	0.86	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	1.0
-21	490	510	0.86	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-18	460	515	0.87	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	1.0
-18	575	620	0.87	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	1.0
-18	575	620	0.88	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-21	485	555	0.88	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	1.0
-48	525	560	0.87	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.9
-48	510	560	0.85	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.94
-39	525	550	0.87	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.91
-39	500	550	0.85	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.89
-39	540	590	0.85	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-36	545	595	0.852	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-36	545	595	0.852	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	1.0
-27	505	580	0.85	12+	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-50	518	574	0.84	12+	1a	Pass	40/40/0 (10)	Pending	<25 ml	0.55
-43	534	579	0.845	12+	1a	Pass	40/40/0 (10)	Pending	<25 ml	0.55
-40	535	585	0.851	12+	1a	Pass	40/40/0 (10)	Pending	<25 ml	0.55
-37	538	592	0.855	12+	1a	Pass	40/40/0 (10)	Pending	<25 ml	0.55
-35	545	595	0.859	12+	1a	Pass	40/40/0 (10)	Pending	<25 ml	0.55
-32	551	640	0.864	12+	1a	Pass	40/40/0 (10)	Pending	<25 ml	0.55

Pour Point, °C ASTM D97	Flash Point, C.O.C. °F ASTM D92	Fire Point, C.O.C. °F ASTM D92	Density at 15.6°C g/mL	Corrosion, Copper Strip ASTM D130	Rust Prevention ASTM D665 A,B	Water Separation ASTM D1401	Oxidation Stability ASTM D2893	Foam Test Seq II ASTM D892	TAN ASTM D974
-12	465	480	0.858	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.25
-54	520	565	0.83	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5
-15	470	572	0.94	1a	Pass	40/40/0 (1)	Pass	<25 ml	0.5

<sup>1</sup>Typical values; not for use in preparing specifications.

## Viscosity Grade Comparisons<sup>1</sup>



<sup>1</sup>Chart courtesy of Society of Tribologists & Lubrication Engineers



AV03945

# Pastes

Molykote® pastes consist of a high concentration of solid lubricants dispersed in oil for convenient application. In cases where oils and greases are squeezed out of the lubricating contact, solid lubricants form tenacious adhering films, which prevent damages under extreme loads and low speeds. Major applications are initial assembly and running-in.



AV08198

## Molykote® P-37 Ultrapure High Temperature Paste

- **Primary Use** – Threaded connections where an ultrapure paste is needed.
- **Special Characteristics** – Helps prevent seizure and damage of threaded connections during assembly and disassembly after extreme high-temperature exposure; nickel-free; does not contain any compounds that embrittle alloys.
- **Physical Form** – Black, metal-free paste consisting of solid lubricants in ultrapure, sulfur-free synthetic oils.
- **Applications** – Threaded connections, particularly those consisting of steel alloys with high chromium, nickel or molybdenum content (stainless steel); steam and gas turbine fasteners.
- **Temperature Range** – Solids from -20 to 2550°F (-29 to 1400°C); base oil from -40 to 250°F (-40 to 121°C).
- **Container Sizes** – Spray, cans and pails.

## Molykote® M-77 Part Assembly Paste

- **Primary Use** – Part assembly; running in; as a press-fitting lubricant where high temperature is a factor.
- **Special Characteristics** – Wider and higher operating temperature range than organic oil based pastes; extreme loads; low speeds.
- **Physical Form** – Black, soap thickened, silicone fluid based paste containing more than 60% MoS<sub>2</sub>.
- **Applications** – Lubricating during running-in of gears, splines, journal bearings, cams; reducing torque in tightening threads and bolts; lubricating bearing shafts, O-rings, packings and seals, brake assemblies; press-fitting.
- **Temperature Range** – Solids from -50 to 750°F (-45 to 399°C); base oil from -40 to 450°F (-40 to 232°C).
- **Limitations** – Not recommended for use in pressure lines.
- **Container Sizes** – Cans, pails and drums.



## Molykote® 1000 High Temperature Anti-Seize Paste

- **Primary Use** – High Temperature Anti-Seize Premium multi-purpose paste for threaded connections.
- **Special Characteristics** – Release and sealing properties; resists aging; wide service temperature range; protects against fretting corrosion.
- **Physical Form** – Brown, mineral oil based paste containing solid lubricants, powdered metals and corrosion inhibitors.
- **Applications** – Lubricating threaded connectors exposed to severe environments; lubricating rollers, oven chains, hinges, marine and outdoor equipment.
- **Temperature Range** – Solids from -20 to 1202°F (-29 to 650°C); base oil from -40 to 250°F (-40 to 121°C).
- **Limitations** – Not recommended for use in grease guns or high-pressure systems; separation may occur.
- **Container Sizes** – Cans.

## Molykote® D General Purpose White Paste

- **Primary Use** – General Purpose paste for assembly and running equipment, especially where staining by black solids may be undesirable.
- **Special Characteristics** – “Clean” white paste; handles very heavy loads; will not drip or run; almost invisible in thin films, excellent protection against fretting corrosion.
- **Physical Form** – Mineral oil based paste containing white solid lubricants; contains no metals.
- **Applications** – Lubricating pins, rails and guides of molding machines; lubricating live and dead ends on lathes; lubricating threaded connections, plain bearings, power screws, guides, tracks, office furniture, packaging equipment, precision instruments, paper handling machines.
- **Temperature Range** – Solids from -15 to 480°F (-26 to 249°C); base oil from -40 to 250°F (-40 to 121°C).
- **Container Sizes** – Cans, pails and drums.

## Molykote® Dx Paste

- **Primary Use** – Assembly and running equipment, especially where staining by black solids may be undesirable.
- **Special Characteristics** – “Clean” white paste; handles very heavy loads; will not drip or run; almost invisible in thin films, excellent protection against fretting corrosion and galling.
- **Physical Form** – Mineral oil based paste containing white solid lubricants; contains no metals.
- **Applications** – Lubricating pins, rails and guides of molding machines; lubricating live and dead ends on lathes; lubricating threaded connections, plain bearings, power screws, guides, tracks, office furniture, packaging equipment, precision instruments, paper handling machines.
- **Temperature Range** – Solids from -15 to 255°F (-25 to 125°C); base oil from -40 to 250°F (-40 to 121°C).
- **Container Sizes** – Cans and kegs.

## Molykote® G-n Metal Assembly Paste/Spray

- **Primary Use** – Reducing friction and wear on parts during assembly and breaking-in.
- **Special Characteristics** – Low coefficient of friction; extreme loads; low speeds.
- **Physical Form** – Gray-black paste or spray of MoS<sub>2</sub> and other lubricating solids in mineral oil.
- **Applications** – Breaking-in bearings, splines, gears, cams, tracks; lubricating gears, chains, conveyor tracks, threaded connections; lubricating during metal forming, general parts assembly, press-fitting, cold extrusion.
- **Temperature Range** – Solids to 750°F (399°C); base oil from 0 to 250°F (-18 to 121°C).
- **Limitations** – Not recommended for use in pressure lines or grease guns; reduce torque values by approximately 1/3 when used on threaded connections.
- **Container Sizes** – Spray, cans, tubes, pails, kegs and drums.

## Molykote® P-1900 Food Grade Assembly Paste

- **Primary Use** – Preventing galling, stick-slip and seizure of sliding surfaces and friction contacts where use of a paste acceptable under FDA 21 CFR 178.3570 is necessary.
- **Special Characteristics** – “Clean” white paste; handles heavy loads; good resistance to water washout, almost invisible in thin films, excellent protection against fretting corrosion.
- **Physical Form** – Mineral oil based paste containing white solid lubricants and an aluminum complex thickener.
- **Applications** – Lubricating pins, rails, tracks, guides, spline shafts and threaded connections of food and beverage processing equipment.
- **Temperature Range** – Solids from -22 to 572°F (-30 to 300°C).
- **Listings/Specifications** – H-1
- **Container Sizes** – Cans, pails and drums.

## Compounds

Dow Corning® silicone compounds are grease-like lubricants containing silicone fluids and inert silica fillers. They are resistant to oxidation and thermal degradation while maintaining their properties over a wide temperature range. They are designed as release agents and may be used as O-ring assembly lubricants, non-conductors of electricity, non-curing sealants and as assembly lubricants for plastic and rubber parts. Silicone compounds may be used for applications where they function in a dual role as both lubricant and sealant.



AV01066

## Dow Corning® 4 Electrical Insulating Compound

- **Primary Use** – Dielectric moisture barrier on electrical equipment.
- **Special Characteristics** – High dielectric strength; least tacky of Dow Corning silicone compounds; moisture and ozone resistance.
- **Physical Form** – Medium-consistency, translucent white, grease-like silicone paste.
- **Applications** – Lubricating and moisture-proofing ignition systems, disconnect junctions, electrical assemblies and terminals, cable connectors and battery terminals; maintaining flexibility of natural and synthetic rubbers, vinyls, plastics, rubber and plastic O-rings.<sup>1</sup>
- **Temperature Range** – From -40 to 400°F (-40 to 204°C).
- **Listings/Specifications** – FDA 21 CFR 175.300, NSF 51, NSF 61.
- **Container Sizes** – Tubes, pails and drums.

## Dow Corning® 5 Compound

- **Primary Use** – A dielectric compound used on insulators and bushings; as a lubricant for high-current switches.
- **Special Characteristics** – Nonconductive; water repellent; helps prevent formation of conductive paths; long lasting.
- **Physical Form** – Translucent light-gray, heavy-consistency, grease-like silicone paste.
- **Applications** – Protecting transmission insulators, distribution line insulators, power substation bushings, pole top disconnect switches, insulator threads and bolts, service entrance cable, meters.<sup>1</sup>
- **Temperature Range** – From -65 to 450°F (-54 to 232°C).
- **Container Sizes** – Tubes and pails.

## Dow Corning® 7 Release Compound

- **Primary Use** – A release and parting agent for plastic and metal surfaces.
- **Special Characteristics** – Excellent release agent; high dielectric strength; good thermal stability; lowest consistency of Dow Corning silicone compounds.
- **Physical Form** – Light-consistency, translucent white, grease-like silicone paste.
- **Applications** – Mold break-in treatment for tire press bladders; release agent for adhesives, plastic extruders, foundry shell and core molds; lubricating plastics and elastomers; lubricating rubber-covered cable to be drawn through a conduit.<sup>1</sup>
- **Temperature Range** – From -40 to 400°F (-40 to 204°C).
- **Listings/Specifications** – FDA 21 CFR 175.300, NSF 51, NSF 61.
- **Container Sizes** – Tubes, pails and drums.

<sup>1</sup>Do not use with silicone elastomers; do not apply to surfaces to be painted; not recommended for use with highly oxidative chemicals (e.g., liquid chlorine, liquid oxygen); not recommended as a lubricant in metal bearings; use only with adequate ventilation.



## Dow Corning® 111 Valve Lubricant & Sealant

- **Primary Use** – General purpose O-ring and valve lubricant.
- **Special Characteristics** – Provides a noncuring moisture barrier; high dielectric strength; moisture and ozone resistance; good thermal, oxidation and chemical stability; suitable for use with potable water under NSF 61.
- **Physical Form** – Heavy-consistency, translucent white, grease-like silicone paste.
- **Applications** – Lubricating plug, sanitary, gate, ball, butterfly and automated valves, pump packings, rubber and plastic O-rings; sealing vacuum and pressure systems (especially equipment subjected to washing and harsh environments); damping medium for dash pots in electrical equipment.<sup>1</sup>
- **Temperature Range** – From -40 to 400°F (-40 to 204°C).
- **Listings/Specifications** – FDA 21 CFR 175.300, NSF 51, NSF 61.
- **Container Sizes** – Tubes, cartridges, pails and drums.

## Dow Corning® 112 High Performance Lubricant/Sealant

- **Primary Use** – Lubricating and sealing valves.
- **Special Characteristics** – Similar to Dow Corning® 111 Valve Lubricant & Sealant, but has a higher operating temperature range and improved mechanical stability.
- **Physical Form** – Heavy-consistency, translucent white, grease-like silicone paste.
- **Applications** – Lubricating plug, sanitary, gate, ball, butterfly and automated valves, pump packings, rubber and plastic O-rings; sealing vacuum and pressure systems (especially equipment subjected to washing and harsh environments); damping medium for dash pots in electrical equipment.<sup>1</sup>
- **Temperature Range** – From -40 to 450°F (-40 to 232°C).
- **Container Sizes** – Tubes, pails and drums.

## Dow Corning® 340 Heat Sink Compound

- **Primary Use** – Thermal coupling of electrical/electronic devices to heat sinks.
- **Special Characteristics** – High thermal conductivity; low bleed; stable at high temperatures.
- **Physical Form** – White, grease-like silicone heavily filled with heat-conductive metal oxides.
- **Applications** – Applied to the base and mounting studs of transistors, diodes and silicon-controlled rectifiers; thermal coupler for many heat sink devices; high-voltage corona-suppressant; nonflammable coating in flyback transformer connections in TV sets.<sup>1</sup>
- **Temperature Range** – From -40 to 390°F (-40 to 199°C).
- **Container Sizes** – Tubes, cartridges, pails and drums.

<sup>1</sup>Do not use with silicone elastomers; do not apply to surfaces to be painted; not recommended for use with highly oxidative chemicals (e.g., liquid chlorine, liquid oxygen); not recommended as a lubricant in metal bearings; use only with adequate ventilation.

## Dow Corning® High Vacuum Grease

- **Primary Use** – Sealing and lubricating vacuum and pressure systems.
- **Special Characteristics** – Low volatility to hold deep vacuums; resists oxidation; nonmelting; nongumming; good chemical and thermal stability.
- **Physical Form** – Translucent white, heavy-consistency, nonmelting grease-like silicone.
- **Applications** – Vacuum and pressure system maintenance; laboratory equipment.<sup>1</sup>
- **Temperature Range** – From -40 to 400°F (-40 to 204°C).
- **Listings/Specifications** – FDA 21 CFR 175.300, H-2<sup>2</sup>, NSF 61.
- **Container Sizes** – Tubes and pails.

<sup>1</sup>Do not use with silicone elastomers; do not apply to surfaces to be painted; not recommended for use with highly oxidative chemicals (e.g., liquid chlorine, liquid oxygen); not recommended as a lubricant in metal bearings.

<sup>2</sup>Acceptable as a lubricant where there is no possibility of food contact.



AV01639

# Dispersions and Other Products

Molykote® dispersions are finely dispersed solids or other lubricants suspended in lubricating fluids. They are preferred where it is necessary to apply solid lubricants in liquid form to units in operation or to otherwise inaccessible points. Some dispersions serve as antiwear and extreme pressure additives for lubricating oils like gear and engine oils.



AV08199

## Molykote® 40 High Temperature Chain Lubricant

- **Primary Use** – Lubricating light and moderately loaded chains, conveyors and bearings that operate at elevated temperatures, especially in drying or baking ovens.
- **Special Characteristics** – Suitable for automatic dispensing systems; material penetrates inaccessible areas, leaving a solid film behind that lubricates to 1000°F (538°C); base fluid evaporates cleanly leaving graphite to lubricate; moderate loads at low speeds.
- **Physical Form** – Black, low-viscosity fluid dispersion of graphite in a synthetic oil.
- **Applications** – Lubricating chains in high-temperature ovens used for heat treating, paint dryers, bakeries, oven conveyors, ventilators, blower fans, oven carts.
- **Temperature Range** – From 350 to 1000°F (177 to 538°C).
- **Listings/Specifications** – H-2. Acceptable for use where there is no possibility of food contact.
- **Limitations** – Surface temperature at location of application should be below 250°F (121°C); continuous operation below 350°F (177°C) may cause gumming; best operating conditions are above 350°F (177°C).
- **Container Sizes** – Bottles, pails and drums.

## Molykote® 314 Silicone Lubricant

- **Primary Use** – Cutting and sewing operations.
- **Special Characteristics** – Reduces friction and sticking; helps speed production; enhances resistance to moisture and oxidation.
- **Physical Form** – Silicone fluid dispersed in petroleum distillate; translucent.
- **Applications** – Lubricating cutting machine blades and tables, base plates, sewing machines, thread, irons, curtain and drapery rods; reducing friction on cutting tables; freeing the running of machine feeders, feet and needles; mold release for operations requiring a heavy-duty, high-film-strength release.
- **Temperature Range** – From -20 to 390°F (-29 to 199°C).
- **Container Sizes** – Spray.

## Molykote® 316 Silicone Release Spray

- **Primary Use** – Release of materials from a variety of surfaces.
- **Special Characteristics** – Complies with FDA and USDA regulations for incidental food contact and use as a release agent; remains stable over a wide temperature range.
- **Physical Form** – Clear silicone compound dispersed in petroleum distillate.
- **Applications** – Lubricating evaporator and preheater tubes, heating coils, cooking kettles, sliding doors on display cases, refrigerator and freezer door gaskets, conveyor guide rails, tray and freezer filling spouts, drying tables, storage shelves; release coating for ovens, stainless steel fixtures, counter tops, processing and packaging equipment, dispensing chutes.
- **Temperature Range** – From -40 to 390°F (-40 to 199°C).
- **Listings/Specifications** – FDA 21 CFR 175.300, FDA 21 CFR 178.3570(H-1)
- **Container Sizes** – Spray, cans, pails and drums.

## Molykote® 557 Silicone Dry Film Lubricant

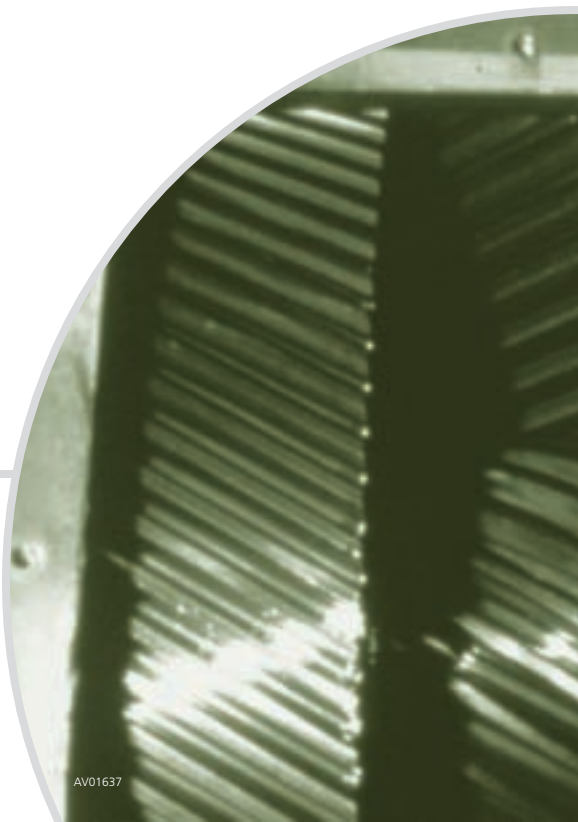
- **Primary Use** – Dry film lubrication of sliding contacts, particularly with aluminum and stainless steel; helps extend the life of knives, tools and dies; sizing and coining powdered metal parts.
- **Special Characteristics** – Colorless; nonstaining; high loads at low speeds.
- **Physical Form** – Clear, wax-like silicone dispersed in a noncombustible solvent.
- **Applications** – Lubricating slitter blades, tools and dies, taps and drills, slides, conveyors, adjusting screws, guides, tracks, handling equipment, metal stamping machines; improving surface finish of aluminum during extrusion; in the textile and woodworking industries to reduce staining from spinning frames, scissors, punches, material handling and packaging equipment.
- **Temperature Range** – From -40 to 110°F (-40 to 43°C).
- **Listings/Specifications** – H-2. Acceptable for use where there is no possibility of food contact.
- **Container Sizes** – Spray, pails and drums.

## Molykote® Metal Protective Coating

- **Primary Use** – Long-term corrosion protection.
- **Special Characteristics** – Extremely resistant to corrosive or salty environments; transparent with good inherent lubricating properties, permitting examination and use of parts without removing the coating.
- **Physical Form** – Translucent, dry, wax-like coating in solvent.
- **Applications** – Protecting machined parts, stampings, raw stock, finished products, dies, fixtures, molds, tools, stored parts, mining equipment, machines and vehicles shipped overseas.
- **Temperature Range** – From -40 to 150°F (-40 to 66°C).
- **Container Sizes** – Spray, pails and drums.

## Molykote® L-0501 High Performance Penetrating Lubricant

- **Primary Use** – Multi-purpose penetrating lubricant for loosening rusted parts, stopping squeaks; short-term corrosion protection; water displacement.
- **Special Characteristics** – Significantly lower volatility for longer-term lubrication than conventional penetrating oils; penetrates rust; displaces water; retards corrosion.
- **Physical Form** – Antiwear additive, corrosion inhibitors and oxidation inhibitors dispersed in petroleum distillates; translucent yellow.
- **Applications** – Aiding disassembly of parts; lubricating locks, hinges, cranks, sliding doors, tools, chains, cables.
- **Temperature Range** – From -20 to 120°F (-29 to 49°C).
- **Container Sizes** – Spray, bottles, pails and drums.

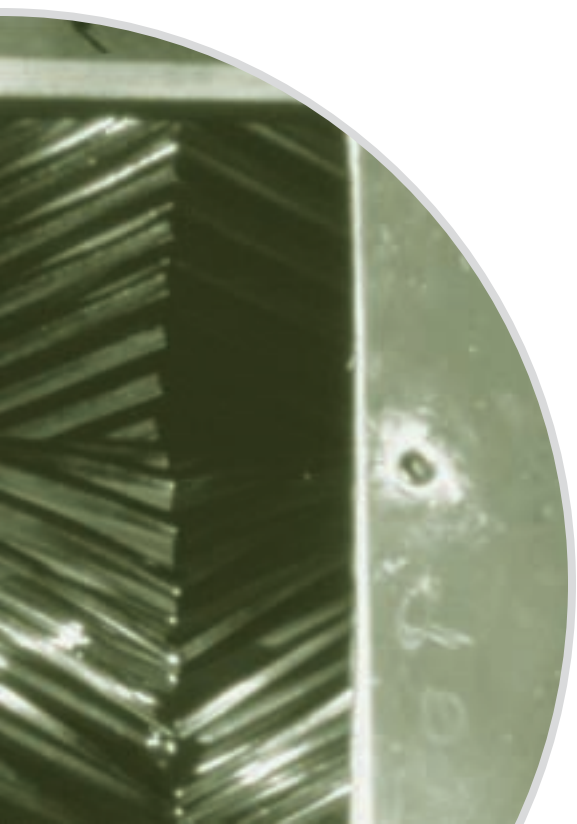


## Molykote® Food Grade Spray Oil

- **Primary Use** – Multi-purpose spray lubricant for lubrication of mechanical components in food and beverage processing equipment.
- **Special Characteristics** – Good penetration; high load capability and corrosion protection. Acceptable under FDA 21 CFR 178.3570 for use in applications with incidental food contact.
- **Physical Form** – Water-white mineral oil fortified with EP/AW additives and a corrosion inhibitor.
- **Applications** – Chains, slides, guides, tracks, augers, tools and other equipment.
- **Temperature Range** – From 14 to 248°F (-10 to 120°C).
- **Container Size** – Spray.

## Molykote® G-Rapid Spray

- **Primary Use** – Reducing friction and wear on parts during assembly and breaking-in.
- **Special Characteristics** – Low coefficient of friction; extreme loads; low speeds.
- **Physical Form** – Gray-black paste or spray of MoS<sub>2</sub> and other lubricating solids in mineral oil.
- **Applications** – Breaking-in bearings, splines, gears, cams, tracks; lubricating gears, chains, conveyor tracks, thread cutting; lubricating during metal forming, general parts assembly, press-fitting, cold extrusion.
- **Temperature Range** – Solids to 750°F (400°C); base oil from 0 to 250°F (-18 to 121°C).
- **Limitations** – Reduce torque values by approximately 1/3 when used on threaded connections.
- **Container Sizes** – Spray.



## Molykote® M Gear Oil Dispersion

- **Primary Use** – Industrial gear oil additive; reducing friction in gearboxes; reducing wear and lowering operating temperatures.
- **Special Characteristics** – High load-carrying capacity at slow to moderate speeds; compatible with most petroleum gear oils; resists foaming; reduces friction and wear.
- **Physical Form** – Black, liquid dispersion of MoS<sub>2</sub> in mineral oil.
- **Applications** – Additive to petroleum oils used in gearboxes, circulating and splash lubricating systems and drives; in metalworking oils.
- **Temperature Range** – From 0 to 250°F (-18 to 121°C), depending on oil to which it is added.
- **Limitations** – Not recommended for use in synthetic oils or water-soluble cutting oils; not for use with wet clutches or other friction-controlled devices.
- **Container Sizes** – Cans and pails.

## Molykote® Z Powder

- **Primary Use** – Dry powder lubricant in metal working; as an additive in other lubricants.
- **Special Characteristics** – Reduces torque and friction; lubricates even when pressures approach 500,000 psi (3,500,000 kPa); resists liquid or gaseous oxygen, radiation, chemical and vacuum environments; meets MIL spec; operates over a wide temperature range; helps prevent fretting corrosion, galling and seizing.
- **Physical Form** – Black, highly purified MoS<sub>2</sub> powder.
- **Applications** – Press-fitting, assembly, metal forming, running-in new or rebuilt equipment; helps prevent cold welding of metal surfaces under static pressure or vibration (fretting corrosion).
- **Temperature Range** – From -375 to 750°F (-226 to 399°C).
- **Listings/Specifications** – MIL-M-7866.
- **Container Sizes** – Bottles, pails and drums.

## Dow Corning® FS-1265 Fluid

- **Primary Use** – Lubricating in harsh environments; high-temperature hydraulic fluid; base fluid for lubricating greases.
- **Special Characteristics** – Resists oxidation, harsh chemicals, fuels, high temperatures.
- **Physical Form** – Fluorosilicone fluid; available in 300, 1000 and 10,000 cSt.
- **Applications** – Lubricating fluid in vacuum pumps handling reactive gases, in high- and low-temperature bearings, in bearings subjected to washing by fuels or solvents; base oil for fluorosilicone greases.
- **Temperature Range** – From -40 to 400°F (-40 to 204°C).
- **Container Sizes** – Cans, bottles, pails and drums.



# Anti-Friction Coatings

Molykote® Anti-Friction Coatings (A-F Coatings) are paint-like products. They contain, instead of a coloring pigment, submicron sized particles of solid lubricants dispersed through carefully selected resin blends and solvents. Important for the lubricating and corrosion protection properties are the choice of the right raw materials and the volume concentration of the lubricant content. In addition to greases and oils, or where possible, as replacement of those hydrodynamic lubricants, Molykote A-F Coatings form a lubricating film, which helps cover surface roughness and thus protects against surface to surface friction (e.g. metal to metal, plastic to metal, plastic to plastic) even under extreme loads. They are applied by conventional painting techniques: e.g. spraying, dip-spinning or brushing.



AV08200

## Molykote® 106 Bonded Lubricant

- **Primary Use** – Premium long-term “dry” lubrication of precision parts.
- **Special Characteristics** – High load-carrying capacity at low speeds; good solvent and oil resistance.
- **Physical Form** – Dark gray solvent dispersion of MoS<sub>2</sub>, graphite and other solid lubricants with special additives; heat cured.
- **Applications** – Wearing-in and extending life of disc clutches, gears, centrifugal pumps, pistons, piston and ring-type pumps, control valve components, bearings, shafts; lubricating disconnects, splines, threaded connections; especially suited for dusty environments.
- **Temperature Range** – From -95 to 480°F (-71 to 249°C).
- **Container Sizes** – Bottles and pails.

## Molykote® 321 Dry Film Lubricant

- **Primary Use** – Long-term “dry” lubrication where air drying formulation is desired.
- **Special Characteristics** – Will not attract contaminants; easy to apply; dries to touch in seconds; cures at room temperature; extreme loads at low speeds.
- **Physical Form** – Dispersion of MoS<sub>2</sub>, graphite and resin in solvent; cures to a dark gray, dry film lubricant.
- **Applications** – Lubricating gears, cutting tools, gear cutters, milling cutters, taps, drills, punches, splines, threaded connections, disconnects; cold extrusion; lubricating moving parts in appliances; especially suited for dusty environments.
- **Temperature Range** – From -290 to 840°F (-179 to 449°C).
- **Container Sizes** – Spray and pails.

## Molykote® 3400A Corrosion Protective Coating

- **Primary Use** – Long-term “dry” lubrication with enhanced corrosion protection.
- **Special Characteristics** – Good solvent resistance; meets MIL spec; excellent lubrication and corrosion protection.
- **Physical Form** – Dispersion of solid lubricants and corrosion inhibitors in a thermosetting resin; heat cures to a dark gray, dry film lubricant.
- **Applications** – Hinges and linkages; sleeve, plain and self-aligning bearings; tracks, threaded fasteners, splines and geared couplings, engine bellows, locks, switches, controls and servo mechanisms, swivels, gears and drive linkages.
- **Temperature Range** – From -325 to 900°F (-198 to 482°C).
- **Container Sizes** – Cans, pails and drums.

## Molykote® 7400 Bonded Lubricant

- **Primary Use** – Long-term “dry” lubrication where solvents are unacceptable.
- **Special Characteristics** – Water based; environmentally acceptable formulation; high load-carrying capacity.
- **Physical Form** – Dispersion of MoS<sub>2</sub> and solid lubricants in a water-dilutable resin binder; cures to a dark gray, dry film lubricant.
- **Applications** – Running-in of gears; cold forging of metals; lubricating ball joints, gears, splines, sliding parts, screw actuators, hinges, brake parts, ball bearing cages; especially suited for dusty environments.
- **Temperature Range** – From -95 to 390°F (-71 to 199°C).
- **Container Sizes** – Pails and drums.



AV01643

# Physical Properties

## Greases

	Base Oil	Viscosity at 40°C (cSt)	Thickener	Solid Lube
Molykote® BR-2 Plus Multi-Purpose E.P. Grease	Mineral oil	110	Lithium	MoS <sub>2</sub>
Molykote® Longterm 00 Fluid Grease	Mineral oil	300	Lithium	MoS <sub>2</sub>
Molykote® G-0050FG White EP Bearing Grease	Mineral oil	70	Aluminum complex	White solids
Molykote® G-0051FG White EP Bearing Grease	Mineral oil	70	Aluminum complex	White solids
Molykote® G-0052FG White EP Bearing Grease	Mineral oil	115	Aluminum complex	White solids
Molykote® G-0010 Bearing Grease	Mineral oil	125	Polyurea	None
Molykote® G-0101 Long Life Bearing Grease	Mineral oil	101	Lithium complex	None
Molykote® G-0102 High Load Bearing Grease	Mineral oil	150	Calcium complex	None
Molykote® G-1001 High Performance Bearing Grease	Mineral oil+PAO	58	Lithium complex	None
Molykote® G-2001 High Speed Bearing Grease	Polyalphaolefin (PAO)	35	Lithium-calcium	None
Molykote® G-4500 Multi-Purpose Synthetic Grease	Polyalphaolefin (PAO)	110	Aluminum complex	PTFE, White solids
Molykote® G-4501 Multi-Purpose Synthetic Grease	Polyalphaolefin (PAO)	110	Aluminum complex	PTFE, White solids
Molykote® G-4700 Extreme Pressure Synthetic Grease	Polyalphaolefin (PAO)	150	Lithium complex	MoS <sub>2</sub>
Molykote® BG 20 High Performance Synthetic Grease	Polyolester	55	Lithium complex	None
Molykote® BG 555 Low Noise Grease	Polyolester	26	Lithium	None
Molykote® 1292 Long Life Bearing Grease	Fluorosilicone	495	Polyurea	None
Molykote® 3451 Chemical Resistant Bearing Grease	Fluorosilicone	495	PTFE	PTFE
Molykote® 3452 Chemical Resistant Valve Lubricant	Fluorosilicone	9930	PTFE	PTFE
Molykote® 33 Extreme Low Temp. Bearing Grease <sup>6</sup>	Silicone	76	Lithium	None
Molykote® 41 Extreme High Temp. Bearing Grease	Silicone	375	Carbon black	None
Molykote® 44 High Temp. Bearing Grease <sup>6</sup>	Silicone	84	Lithium	None
Molykote® 55 O-Ring Grease	Silicone	76	Lithium	None
Molykote® 1122 Chain and Open Gear Grease	Polyisobutylene	1500	None	MoS <sub>2</sub> , Graphite
Molykote® G-6000 High Temperature Bearing Grease	Phenylether	103	Polyurea	None

## Pastes

	Base Oil	Solid Lubricant	Specific Gravity	Temperature Range <sup>1</sup> °F
Molykote® P-37 Ultrapure High Temperature Paste	Mineral	Zirconium dioxide	1.20	-22 to 2550 <sup>10</sup>
Molykote® M-77 Part Assembly Paste	Silicone	MoS <sub>2</sub>	1.95	-50 to 750 <sup>11</sup>
Molykote® 1000 High Temperature Anti-Seize Paste	Mineral	Copper/graphite	1.26	-20 to 2000 <sup>10</sup>
Molykote® D General Purpose White Paste	Mineral	White solids	1.27	-15 to 480 <sup>10</sup>
Molykote® Dx Paste	Mineral	White solids	1.14	-15 to 255 <sup>10</sup>
Molykote® G-n Metal Assembly Paste/Spray	Mineral	MoS <sub>2</sub>	1.38	0 to 750 <sup>10</sup>
Molykote® P-1900 Food Grade Assembly Paste	Mineral	White solids	1.11	-22 to 572 <sup>10</sup>

# Physical Properties

Temperature Range <sup>1</sup> °F	Dn Value <sup>2</sup>	Drop Point, min. °F (°C)	Bleed <sup>3</sup> %	Evaporation <sup>3</sup> %	NLGI #	Four Ball Weld Load <sup>4</sup> , min., kg	Four Ball Wear Scar <sup>5</sup> , mm	Color(s)	Specific Gravity	NSF
-20 to 265	300,000	390 (200)	0.5 at 212°F	0.0 at 212°F	2	325	0.46	Black	0.90	
-40 to 230	n/a	374 (190)			00	340	0.90	Black	0.93	
-20 to 300	250,000	420 (216)	8.0 at 212°F	0.3 at 212°F	0	315	0.80	White	0.89	H-1 <sup>8</sup>
-20 to 300	250,000	450 (232)	5.0 at 212°F	0.3 at 212°F	1	315	0.80	White	0.89	H-1 <sup>8</sup>
-20 to 300	250,000	475 (246)	3.0 at 212°F	0.3 at 212°F	2	315	0.60	White	0.89	H-1 <sup>8</sup>
-20 to 340	400,000	525 (274)	2.2 at 212°F	0.0 at 212°F	2	315	0.60	Green	0.93	
-5 to 300	375,000	500 (260)	1.5 at 212°F	0.3 at 212 °F	2	200**	0.89**	Yellow-brown	0.91	
-10 to 285	325,000	572 (300)	< 4.0 at 40°C**		2	325**	0.55**	Brown	0.91	
-20 to 300	350,000	500 (260)	1.9 at 212°F	0.4 at 212 °F	3	180**	0.69**	Light brown	0.91	
-60 to 265	650,000	374 (190)	< 2.5 at 40°C**	0.6 at 212 °F	2	155**	0.69**	Beige	1.00	
-60 to 325	325,000	520 (270)	3.1 at 212°F	0.4 at 212°F	2	315	0.50	White	0.84	H-1 <sup>8</sup>
-60 to 325	325,000	500 (260)	4.7 at 212°F	0.5 at 212°F	1	315	0.50	White	0.83	H-1 <sup>8</sup>
-40 to 350	350,000	545 (285)	2.5 at 212°F	0.2 at 212°F	2	400	0.32	Black	0.87	
-50 to 360	550,000	570 (300)	2.2 at 300°F	1.5 at 300°F	2	265	0.87	Beige	1.01	
-40 to 300	925,000	383 (195)	1.0 at 212°F	0.3 at 212°F	2-3			Beige	1.00	
-40 to 400	200,000	570 (300)	1.2 at 300°F	3.0 at 300°F	1-2	340	1.33	Off-white	1.28	
-40 to 450	200,000	536 (280)	2.7 at 400°F	3.7 at 400°F	2	400	1.30	White	1.44	H-2 <sup>7</sup>
-20 to 450	75,000	570 (300)	1.2 at 400°F	1.1 at 400°F	2-3	400	1.45	White	1.50	
-100 to 400	200,000	440 (225)	1.0 at 300°F	2.8 at 300°F	2	120	2.59	Lt. beige to pink	0.97	H-2 <sup>7</sup>
0 to 550	75,000	570 (300)	4.8 at 392°F	2.5 at 392°F	2	240	3+	Black	1.14	
-40 to 400	300,000	432 (220)	2.0 at 300°F	2.0 at 300°F	2	110	1.05	Dark red	1.05	
-85 to 350	n/a	400 (205)	3.0 at 300°F	1.4 at 300°F	2	n/a	n/a	Lt. beige to pink	1.10	
32 to 320	75,000	570 (300)	2.7 at 300°F	1.9 at 300°F	2-3	265	0.61	Black	0.95	H-2 <sup>7</sup>
-40 to 395	350,000	500 (260)	1.2 at 212°F		2	130**	0.76**	Light brown	0.85	

Coefficient of Friction <sup>9</sup> , LFW 4	Four Ball Weld Load <sup>4</sup> , kg	Color(s)	Specifications
0.10	408	Black	
0.20	249	Black	
0.30	490	Brown	
0.10	265	Off-white	
0.10	489	White	
0.09	499	Gray-black	
0.10	320	White	H-1 <sup>8</sup>

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

<sup>2</sup>Dn value = shaft size of bearing in mm x RPM; based on estimate.

<sup>3</sup>Federal Standard 791. [\*\*Denotes DIN test method.]

<sup>4</sup>Four Ball Weld Load: ASTM D 2596. [\*\*Denotes DIN test method.]

<sup>5</sup>Four Ball Wear Scar: ASTM D 2566. [\*\*Denotes DIN test method.]

<sup>6</sup>Data for medium-consistency product.

<sup>7</sup>Acceptable as a lubricant with no possible food contact.

<sup>8</sup>Acceptable as a lubricant with possible incidental food contact under FDA 21 CFR 178.3570.

<sup>9</sup>Coefficient of Friction: Dow Corning Corporate Test Method 394.

<sup>10</sup>Temperature resistance of solid lubricant portion; base oil effective to 250°F.

<sup>11</sup>Temperature resistance of solid lubricant portion; base oil effective to 450°F.

# Physical Properties

## Compounds

	Base Oil	Dielectric Strength <sup>1</sup> , volts/mil	Thickener System	Specific Gravity
Dow Corning® 4 Electrical Insulating Compound	Silicone	> 450	Silica	1.0
Dow Corning® 5 Compound	Silicone	545	Silica	1.0
Dow Corning® 7 Release Compound	Silicone	> 450	Silica	1.0
Dow Corning® 111 Valve Lubricant & Sealant	Silicone	> 450	Silica	1.0
Dow Corning® 112 High Performance Lubricant/Sealant	Silicone	490	Silica	1.1
Dow Corning® 340 Heat Sink Compound	Silicone	210	Zinc oxide	2.1
Dow Corning® High-Vacuum Grease	Silicone	> 450	Silica	1.0

## Dispersions and Other Products

	Lubricant	Solvent	Temperature Range <sup>2</sup> °F
Molykote® 40 High Temp. Chain Lubricant	Graphite	Polyalkylene glycol	350 to 1000
Molykote® 314 Silicone Release Lubricant	Silicone fluid	Petroleum distillate	-20 to 390
Molykote® 316 Silicone Release Spray	Silicone compound	Petroleum distillate	-40 to 390
Molykote® 557 Silicone Dry Film Lubricant	Silicone wax	Petroleum distillate	-40 to 110
Molykote® Metal Protective Coating	Wax	Petroleum distillate	-40 to 150
Molykote® L-0501 High Performance Penetrating Lubricant	Mineral oil	Petroleum distillate	-20 to 120
Molykote® Food Grade Spray Oil	Mineral oil	Petroleum distillate	14 to 248
Molykote® G-Rapid Spray	MoS <sub>2</sub>	Petroleum distillate	-30 to 750
Molykote® M Gear Oil Dispersion	MoS <sub>2</sub>	Mineral oil	0 to 250
Molykote® Z Powder	MoS <sub>2</sub>	n/a	-375 to 750
Dow Corning® FS-1265	Fluorosilicone oil	n/a	-40 to 400

## Anti-Friction Coatings

	Solid Lubricant	Solvent	Resin Binder System
Molykote® 106 Bonded Lubricant	MoS <sub>2</sub> /Graphite	Solvent blend	Epoxy
Molykote® 321 Dry Film Lubricant	MoS <sub>2</sub> /Graphite	Naphtha	Butyl titanate
Molykote® 3400A Corrosion Protective Coating	MoS <sub>2</sub>	Petroleum distillates	Epoxy
Molykote® 7400 Bonded Lubricant	MoS <sub>2</sub>	Water	Acrylic

# Physical Properties

Temperature Range <sup>2</sup> °F	Penetration worked 60	Penetration, worked 100,000	Bleed <sup>3</sup> % at 390°F	Evaporation <sup>3</sup> % at 390°F	NLGI #	Color(s)	Listings/ Specifications <sup>4</sup>
-40 to 400	240	279	4.50	1.4	2 to 3	Translucent white	FDA <sup>5</sup> , NSF 51, NSF 61
-65 to 450	210	242	3.50	1.0	3	Translucent light gray	
-40 to 400	270	322	6.50	0.8	1	Translucent white	FDA <sup>5</sup> , NSF 51, NSF 61
-40 to 400	205	217	0.05	1.1	3 to 4	Translucent white	FDA <sup>5</sup> , NSF 51, NSF 61
-40 to 450	230	240	0.03	0.8	3	Translucent white	
-40 to 390	275	245	0.06	0.5	2	White	
-40 to 400	205	227	0.05	1.1	3 to 4	Translucent white	NSF 61, H-2 <sup>6</sup>

Colors	Listings/ Specifications <sup>4</sup>
Black	H-2 <sup>6</sup>
Translucent	
Clear	H-1 <sup>7</sup> , FDA <sup>4</sup>
Clear	H-2 <sup>6</sup>
Translucent	
Translucent yellow	
Transparent	H-1 <sup>7</sup>
Black	
Black	
Black	
Clear	

Temperature Range <sup>2</sup> °F	Falex Load Carrying Capacity <sup>8</sup> , lb	Resistance to Oils	Corrosion Protection <sup>9</sup> , hours	Cure Conditions
-95 to 480	3030	Good	< 10	60 min. at 300°F
-290 to 840	2529	Fair	< 10	30 min. at room temp.
-325 to 900	3890	Excellent	> 500	30 min. at room temp., 1 hour at 400°F
-95 to 390	2550	Poor	< 10	15 min. at room temp.

<sup>1</sup>Dielectric Strength: 50-mil gap, ASTM D 149.

<sup>2</sup>Estimated service temperatures based on product formulation and laboratory testing. Actual service temperature range is dependent on other factors including the specific application environment.

<sup>3</sup>Federal Standard 791.

<sup>4</sup>See individual product listings for specification numbers. Many of these products meet OEM specifications as well. Contact Dow Corning for information about additional authorizations.

<sup>5</sup>Acceptable as a release agent under FDA 21 CFR 175.300.

<sup>6</sup>Acceptable as a lubricant with no possibility of food contact.

<sup>7</sup>Acceptable as a lubricant with possible incidental food contact under FDA 21 CFR 178.3570.

<sup>8</sup>Falex Test: ASTM D 2625.

<sup>9</sup>Corrosion Protection: ASTM B 117.

# Solutions and Services to Meet Your Needs



**As experts in industrial lubrication**, Molykote® from Dow Corning can help you keep your equipment running at peak condition to reduce maintenance and downtime. Together with our distribution partners local representatives and consulting partners, we can provide you with the following Smart Lubrication™ Solutions.

- **Greases** – Consolidating and optimizing lubricant purchases into a single, integrated program can reduce overall maintenance costs, extend equipment life, and simplify the lubricant purchasing process.
- **Audit of Machinery Lubrication Best Practices** – A consultant visits your plant to help identify opportunities to improve machine operations by inspecting machines and oil storage facilities and by interviewing key plant personnel. We'll develop a comprehensive report and review it with your key plant personnel.

- **Onsite Seminar Training** – We offer a wide range of industrial lubrication seminars to meet the needs of industry professionals. Our training seminars include topics such as the fundamentals of machinery lubrication, best practices of lubrication and the importance of oil analysis.
- **Lubrication Testing** – The Molykote Lubrication Testing Service saves time and money by performing a series of mechanical and physical tests to help to determine proper lubrication selection, identify performance standards and specifications, and establish a performance benchmark.
- **Integrated Oil Analysis** – Optimize equipment protection with our integrated oil analysis program. It is designed to tell you exactly how your lubricants have aged, whether they be Molykote or Dow Corning brand; and based on the results from your specific applications, precisely when to change them.
- **Lubrication Management Software** – This state-of-the-art software tracks and schedules routes for thousands of lubrication operations to ensure accurate, cost effective maintenance of plant lubrication.
- **Analytical Testing** – Dow Corning offers a wide variety of analytical testing tailored to meet your needs.

For more information, please contact your local sales representative or visit [www.molykote.com](http://www.molykote.com).





# Glossary of Terms

**Abrasion** – Mechanical wear during sliding of two surfaces against each other.

**Additives** – Substances added in small amounts to lubricants to improve the performance.

**Adhesive lubricants** – Lubricants with adhesion-improving components, which are not thrown off by centrifugal forces.

**A-F Coating** – Means anti-friction coating, the most common and widely used type of dry solid lubrication of today. This group includes both air-dried and heat-cured materials. These formulations usually consist of a lubricating solid called the “pigment” and a bonding agent. See “Binder”

**Ageing resistance** – The resistivity against ageing which might occur due to oxidation, overheating, the presence of certain metals like copper, lead, silver etc. The resistance to ageing can be improved by certain additives (antioxidants).

**ASTM** – American Society for Testing Materials.

**Auto-ignition point** – The temperature at which an oil ignites by itself, i.e. without the presence of a flame.

**Base oil** – Basic component of lubricating oils and greases.

**Binder** – An alternative term for non-volatile medium or vehicle and refers to the material which forms the varnish film and which in a paint or bonded coating binds the particles of solids (solid lubricants) together.

**Bonded lubricant** – See *A-F coating*

**Break away torque** – Effective leverage turned into rotating movement to loosen a bolted connection.

**Chemically inert** – (Lubricant) not reacting chemically with certain substances.

**Coefficient of friction** – Ratio of the frictional force between two surfaces sliding across one another to the force that is perpendicular to the surfaces.

**Colloid** – Small particles ( $10^{-5}$  to  $10^{-7}$  cm) in liquid which behave like a solution (no settling of particles).

**Complex greases** – Lubricating greases with thickeners produced from metallic soaps with various acids. Particularly suitable for high temperatures and long-term applications.

**Consistency** – A measure of the condition of lubricating greases. It is measured as the unworked and worked penetration and is indicated in accordance with the NLGI (National Lubricating Grease Institute). To simplify designation of the consistency of lubricating greases, the consistency range as a whole is divided into nine classes, measured as worked penetration, e.g

Consistency class	Worked penetration (1/10 mm)
00	400-430
0	355-385
1	310-340
2	265-295

**Density** – The weight of a lubricant in grams per  $\text{cm}^3$  at  $20^\circ\text{C}$ .

**Detergent** – Agent for loosening and removing residues and deposits from sliding surfaces.

**Dispersion** – Name given to two-substance systems in which one substance is contained in the other substance (liquid) in a dispersed form.

**DN value** – A guide to the grease which should be used in rolling-element bearings depending upon their speed of rotation. It represents the shaft diameter in mm multiplied by the speed in revolutions per minute.

**Drop point** – The drop point of a grease is that temperature at which grease passes from a semisolid to a liquid state. It is a qualitative indication of the heat resistance of a grease’s thickener. The drop point temperature is determined when the first drop falls through the hole in the bottom of the cup during temperature increase.

**Dynamic viscosity** – A measure for inner friction during flowing of a lubricating oil (e.g. flowing through pipes or clearances).

**EP additives** – Chemical substances to improve the pressure absorption capacity and hence the wear resistance of oils and greases.

# Glossary of Terms

**Emcor** – The test for corrosion protection of lubricating greases in rolling-element bearings in the presence of water: A minimum of two grease-lubricated ball bearings run in water for about one week. The corrosion value of the rings ranges from 0-5 (0 = no corrosion, 5 = severe corrosion).

**Ester oils** – Compounds of acids and alcohols used for lubrication and the production of lubricating greases.

**Flash point** – The flash point is the lowest temperature at which, during heating, flammable vapors are formed on the surface of the oil to be tested which shortly flare up in the presence of a flame.

**Fluoro-silicones** – Silicones which contain fluorine atoms in the molecule.

**Freezing point** – The freezing point of an oil is the temperature in degrees Celsius at which the oil has lost its ability to flow. The solidifying of the oil is caused by the separation of paraffin crystals.

**Fretting corrosion** – Rust which occurs on seats. Better: frictional wear which occurs at fits and seats due to oscillations with very low amplitude and high frequency. Usually, the very small iron wear particles react to rust in combination with oxygen, which finally results in seizing of the seats. Another disadvantage of fretting corrosion is the rapid material fatigue of the steel, a fact which can easily lead to breaking. (Fretting corrosion can be prevented most effectively by the separation of both metal partners, e.g. by means of solid lubricants.)

**Friction** – Resistance against sliding of two surfaces against one another.

**Grease** – 2-phase-system: thickener with fluid, lubricating medium.

**Inhibitors** – Additives for lubricants which reduce oxidation, rust and corrosion.

**Lithium** – Alkalimetal, the hydroxide of which is used together with organic acids to form lithium soaps as thickener for greases.

**Lubricant** – Medium to reduce friction and wear between two surfaces sliding against one another.

**Measurement of viscosity** – Viscosities can be measured in various viscosimeters. The unit is mm<sup>2</sup>/s. An important factor for the measurement of the viscosity is the temperature, because the viscosity does significantly depend on the temperature. (Cold oils are more viscous, warm oils are less viscous.)

**Molybdenum disulphide** (MoS<sub>2</sub>) – A solid lubricant.

**Oil separation** – The “bleeding” of oil from lubricating greases during storage or as a result of mechanical/dynamic or temperature stress.

**O.K. load** – Indication of the pressure resistance of a lubricant. It is the very maximum load at which just no breakthrough of the lubricating film, and thus no welding of the test specimens, occurs (Newton).

**Oxidation resistance** – Resistance of lubricants to reaction with oxygen.

**Pastes** – Combination of solid lubricants with oil for easy application of thin lubricating film.

**Penetration** – Indicates the softness or hardness of a grease. The depth of penetration of a standardized cone in a grease sample is measured. (The higher the penetration, the softer is the grease.)

**Pitting** – Crater-like metal cavities in the pitch line of gear wheels, caused by material fatigue.

**Polyalpha-olefin** – Synthetic hydrocarbon with a defined molecular structure. Low-temperature, high-temperature and viscosity/temperature characteristics are better than with mineral oil.

**Pour point** – Lowest temperature at which a lubricating oil remains free-flowing.

**Pour point depressant** – An additive used to lower the pour point of a lubricating fluid.

**Running-in** – Surface asperities of new sliding surfaces are modified during the running-in period.

# Glossary of Terms

**Salt-water spray test** – The corrosion of steel is measured under the influence of saline fog. Sheet steel is coated with a lubricant and exposed to saline fog in a closed chamber. After the test, the number of hours are measured which have passed until a certain grade of corrosion was reached.

**Scoring** – Trench-shaped marks in metal, caused by machining or by scuffing

**Scuffing** – Damage to material surface through inadequate supply of lubricant, or as a result of overloading. The lubricating film is broken.

**Service temperature range** – The range in which the lubricant meets requirements and an acceptable lubrication interval is achieved.

**Silicones** – Polymers with good temperature and oxidation resistance. Also used as high and low temperature lubricants.

**Soap in lubricating grease** – Combination of a fatty acid and a metal hydroxide. Through the proper selection of the fatty acid and the metal hydroxide (calcium, lithium, aluminum) the properties of the soap can be changed as to water resistance and temperature resistance.

**Solid lubricants** – Solid substances which are applied between sliding surfaces to reduce friction and wear and prevent scoring, cold welding and galling.

**Solvent** – A liquid which will dissolve a material and yield a homogeneous product.

**Specialty lubricants** – Lubricants with particular properties/ characteristics for special applications.

**Specific weight** – See *density*

**Stick-slip** – Stop-start relative movements of two sliding surfaces, caused by the difference in coefficient of friction between hydrodynamic and boundary lubrication.

**Suspension** – A uniform dispersion of the fine particles of a solid in a liquid which does not dissolve them.

**Swelling** – Under the action of lubricants, vapours or gases, sealing materials made from rubber, elastomer, etc., can be negatively affected by swelling.

**Synthetic oils** – In contrast to mineral oils, these oils are produced by chemical synthesis. Synthetic oils usually have a good viscosity/temperature behavior, low tendency to oxidize, low pour point, high temperature stability, and good chemical resistance.

**Tackifiers/Adhesion improvers** – Additives to oils and greases to improve adhesion (e.g. polyisobutene).

**Thickeners** – Thickeners usually are metal soaps (soap-thickened) but also organic or inorganic thickening agents (not soap-thickened as e.g. silica, bentone, urea, PTFE etc.).

**Tribology** – Science of scientific research and technical application of the relation between friction, wear and lubrication, including lubricants.

**Unworked penetration** – The consistency of a grease or paste in the state of rest, i.e. in the state of material as supplied.

**Viscosity** – The viscosity of a liquid is a measurement of its resistance to flow.

**Water resistance of a grease** – The behavior of lubricating greases in the presence of water is of great importance for their applicability as anti-friction bearing greases. For this application, either a water-repellent (water resistant) or a water-absorbent (emulsifiable) lubricating grease is required.

**Wear** – Caused by friction and contact between contacting surfaces after break-through of the lubricating film.

**Weld load** – The ability of a lubricant to absorb pressure, measured in kilogram (kg), the load at which the lubricating film breaks, during sliding of test specimens against each other, and at which both test specimens weld together.

**Worked penetration** – Under mechanical shear, lubricating greases often change their consistency. Therefore, it is more reasonable to indicate the worked penetration. It is the consistency of a worked grease.

## How To Contact Us

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