



MOLYKOTE®

FROM DOW CORNING

Selector Guide for Automotive Lubricant Applications



Solving your performance problems with application-specific Molykote® brand lubricants

- **Imagine breaking off the key in the ignition while trying to start your car in freezing weather.**
- **Imagine having your power-operated window stuck half-open during a driving rain storm.**
- **Imagine a seat track attracting dirt, lint and other grime, that gets on your hands or stains clothes.**

These are clearly not imaginary problems. They're very real concerns. A large part of drivers' comfort, satisfaction and pride of ownership stems from activity inside their vehicles. That makes ergonomic or functional problems in these areas a serious threat to customer satisfaction and repeat sales, especially in these times of intense competition.

The right solution at your fingertips.

The fact is, you can often avoid these kinds of automotive problems simply by choosing the right Molykote® specialty lubricant from Dow Corning. We manufacture a wide variety of specialty lubricants specifically for automotive applications. In addition to long-life, low-friction operation, they can provide added benefits such as:

- electrical compatibility, to avoid breakdowns in switches and other electro-mechanical components that lead to system failure;



AV04060

- plastics compatibility, to avoid degradation and provide long life for light-weight, injection-molded parts such as gears, bushings or housings;
- functionality in extreme temperatures, for smooth, easy operation in high-heat and cold-weather environments;
- dry application, that will not attract dirt and grime, or produce stains.

The right formulation for your automotive environment.

Molykote means much more than silicone grease. This advanced product line is comprised of a wide range of specialty lubricants suitable for applications from seat tracks, to cable sleeves, to window actuators, to HVAC controls.

Choose from:

- anti-friction coatings: permanent, bonded "lubricating paints" that are excellent for track applications, fasteners and areas open to touch or near clothing;
- liquid lubricants, especially for control cables;
- synthetic greases (such as poly-alphaolefin-based compounds), for electrical applications and plastic-on-metal lubrication;
- as well as silicone greases that offer long life, and low friction performances at low and high temperatures.

In addition, through the testing and evaluation conducted at our Lubricants Expertise Center in Plymouth, Michigan, we can demonstrate and document

which specialty lubricant is recommended for your application. We'll also advise you on effective application techniques for any of these lubricants in your production manufacturing environments.

Customized technical support to meet your needs.

Use the Selector Guide charts on the following pages to help choose the right Molykote lubricants for your automotive applications. Then give one of our experienced customer service specialists a call to discuss your needs. He or she can answer your questions about Molykote lubricants and send you technical data for specific applications.

Rest assured, whatever your needs may be, the support team at our Lubricants Expertise Center is available to help meet those needs. Call us. Fax us. We can help solve your performance problems with Molykote lubricants.



AV04061



AV04062

Molykote® Body/Interior Lubricant Selector Chart

System	Component	Key Requirements	Molykote® Products
Air Bag	Actuator	High temperature, high degree of performance reliability	HP-300
Antenna	Actuator	Low friction, plastic & electric compatibility	EM-60L
	Drive cable	Plastic compatibility, high cable efficiency	33L, 211
	Masts	Low friction	D-708
Door Systems	Lock actuator	Low friction, plastic compatibility	EM-30L
	Trim (Interior)	Noise elimination, friction reduction, plastic compatibility	D-96
Fasteners	Screws, bolts, etc.	Corrosion resistance, consistent installation torque values	7405, 7409
Headlamp	Actuator	Low friction, plastic & electric compatibility	EM-50L, EM-60L
HVAC Control	Actuator	Low friction, plastic compatibility	MH-62, MI-60
	Cable	High cable efficiency	33L, 211
	Head	Low friction, plastic compatibility	111, 33M
Instrument Panel	Trim (Interior)	Plastic compatibility	D-96
OSRV Mirror (Outside Rearview)	Actuator	Low friction, plastic compatibility, noise reduction	EM-30L, YM-103
	Drive cable	Low friction, plastic compatibility	33L
Seat Belt	Actuator	Low friction, plastic & electric compatibility	EM-50L, 6173
	Drive cable	Low friction	33L
	Guide track	Low friction, cleanliness	7409
Seat Frame	Actuator	Low friction, plastic & electric compatibility	MI-60, EM-30L, PG-65, G-1023
	Adjuster	Low friction, plastic compatibility	E-paste
	Drive cable	Low friction	33L, PG-75, BG-20
	Lead screw	Low friction, cleanliness	7409
	Guide track	Higher loads, cleanliness	7409, EM-50L, G-1023
Steering Column	Shaft bearing	High load, low friction	BG-20
	Key switch actuator	Plastic & electric compatibility	MI-60
Sun Roof	Actuator	Low friction, plastic & electric compatibility	EM-50L, EM-60L
	Drive cable	Low friction, moderate loads	PG-21, 33M, AS-812
	Guide track	Low friction, cleanliness	D-708
Sun Visor	Shaft	Higher loads, aesthetics	D paste
Window Regulator	Actuator	Low friction, plastic & electric compatibility	EM-50L, EM-60L
	Drive cable	Low friction	33L, PG-21, EM-60L
	Guide track	Low friction, cleanliness	EM-60L, 7409, AI-6159, SK-623
Windshield Wiper	Motor/ transmission	Plastic & electric compatibility	MI-60

Molykote® Lubricants for General Purpose Applications

Description	Key Requirements	Products
High-Performance Lubricant	Multi-purpose penetrating lubricant	<i>Molykote®</i> L-0501
Low Friction Silicone Compound	General purpose lubricant for metal to plastic and metal to rubber	<i>Molykote®</i> G-5881
General Purpose Lubricant Additive	Friction modifier	<i>Molykote®</i> Z Powder

Molykote® Lubricants for Engine Accessories

System	Key Requirements	Products
Alternator/Fan Clutch Bearings	Low-consistency fluorosilicone lubricant, good high-speed lubricant	<i>Molykote®</i> FS-841 Grease
Drive Shaft	Dry film lubricant used for lubricating metal-to-metal components of drive shaft; air-dry coating	<i>Molykote®</i> 321 Dry Film Lubricant
Drive Shaft Spline	Synthetic tacky grease for plastic to metal shaft components	<i>Molykote®</i> EM-D110
Hose Assembly	Used as an assembly lubricant for rubber hoses; used when paintability is an issue	<i>Dow Corning®</i> 290 Paintable Release
	Improved lubrication for rubber-to-metal application	<i>Molykote®</i> 557 Dry Film Lubricant
Sparkplug Boots	Low-consistency silicone compound	<i>Molykote®</i> G-5008 Dielectric Grease
	General-purpose silicone compound	<i>Dow Corning®</i> 111 Compound
Starter Motors	Planetary gear lubricant	<i>Molykote®</i> 7514 Grease, G-1021
	Spline shaft lubricant	<i>Molykote®</i> Q5-7455 Grease, G-1021
	Starter motor clutch lubricant	<i>Molykote®</i> 7325 Grease
	Starter over-run clutch	<i>Molykote®</i> 33L Extreme Low Temp Bearing Grease
	Planetary gear lubricant	<i>Molykote®</i> AG-650 Grease
	Dry bonded lubricant for spline shaft lubrication	<i>Molykote®</i> 3400 Leadfree AF Coating

Molykote® Lubricants for Engine Components

System	Key Requirements	Products
Cam Shafts and Tappets	Used for long-term lubrication; heat-cure material	<i>Molykote® 7409 AF Coating</i>
Diesel Fuel Rail Injector O-Rings	Fuel resistance; elastomer compatibility	<i>Molykote® W-15</i>
EGR Valve	Used at high temperature under severe environment; fuel resistance	<i>Molykote® HP-870</i>
Engine Bolts	Assembly aid; heat-cure material	<i>Molykote® 7405 AF Coating</i>
	Specialized material that provides reduced friction and constant torque values	<i>Molykote® D-3484 AF Coating</i>
	Improves torque during drive-in; air-cure material	<i>Molykote® 321 Dry Film Lubricant</i>
Gaskets	Used to lubricate composite gaskets to prevent damage from expansion/contraction; heat-cure material	<i>Molykote® 7619 Coating</i>
	Used to lubricate steel gaskets to prevent damage from expansion/contraction; heat-cure material	<i>Molykote® 7620 AF Coating</i>
	Used to lubricate composite gaskets to prevent damage from expansion/contraction; air-cure material	<i>Molykote® 321 Dry Film Lubricant</i>
Pistons	Used to lubricate piston skirts; reduces friction during cold-weather starting; heat-cure material	<i>Molykote® D-10 AF Coating or Molykote® PA-744 Coating</i>
	Used during break-in of new pistons; heat-cure material	<i>Molykote® 7409 AF Coating</i>
	Used only on aluminum pistons with aluminum block	<i>Molykote® D-88 AF Coating</i>

Molykote® Lubricants for Chassis/Suspension

System	Key Requirements	Products
Ball Joints	Metal/metal and metal/plastic ball-joint lubricant; mineral oil-based lubricant	<i>Molykote®</i> LT 2/78 Grease
	Metal/plastic ball-joint lubricant; good water-washout and corrosion resistance; low friction coefficient	<i>Molykote®</i> PG-75 Grease
	Dry bonded lubricant for metal ball-joint studs	<i>Molykote®</i> D-708 AF Coating
Bolt Coatings	Used to reduce friction; heat-curable anti-friction coating	<i>Molykote®</i> 7405 AF Coating
	Used to reduce friction; air-dry anti-friction coating	<i>Molykote®</i> 321 Dry Film Lubricant
	Used to reduce friction; heat-curable anti-friction coating	<i>Molykote®</i> 7409 AF Coating
Bolt Lubricants	Used to reduce friction; antifretting paste	<i>Molykote®</i> P-74 Paste
	Used to reduce friction; antifretting, metal-free paste	<i>Molykote®</i> P-40 Paste
CV Joints	Metal/metal lubricant; mineral oil-based lubricant	<i>Molykote®</i> VN-2461 Grease
Differential	Metal-to-metal, compatible with mineral oil-based lubricants, mineral oil lubricant	<i>Molykote®</i> HTP Paste
Strut Bearings	Metal/metal lubricant; mineral oil-based lubricant	<i>Molykote®</i> VN-2461 Grease
Tie Rod Ends	Metal/plastic tie-rod ends; good water-washout and corrosion resistance; low friction coefficient	<i>Molykote®</i> PG-75 Grease
	Metal/plastic tie-rod ends; PAO-based lubricant	<i>Molykote®</i> MI-60 (USA) Grease
	Metal/metal tie-rod end, mineral oil-based lubricant	<i>Molykote®</i> LT 2/78 Grease
Wheel Bearings	High-speed, low friction, high-load synthetic grease	<i>Molykote®</i> G-4700

Molykote® Lubricants for Brakes

System	Key Requirements	Products
Brake Boosters	Good compatibility with rubber; high and low temperature stability	<i>Molykote® 822M Lubricant</i>
	General purpose compound	<i>Dow Corning® 111 Compound</i>
Brake Calipers	Metal/rubber, low stiction, high-temperature resistant, corrosion resistant, water-washout resistant	<i>Molykote® G-807 PTFE Compound</i>
	Metal/metal, low stiction, corrosion resistant, water-washout resistant	<i>Molykote® G-407 Anti-Fretting Grease</i>
	High-temperature resistant, corrosion resistant, water-washout resistant	<i>Dow Corning® 111 Compound</i>
Brake Pads	Used to prevent noise between backplate and shims	<i>Molykote® M-77 Paste</i>
	Additive for brake pad formulation produces controlled friction; high-performance version	<i>Molykote® Lubolid 7365 Powder</i>
	Additive for brake pad formulation produces controlled friction	<i>Molykote® Lubolid 7375 Powder</i>
	Occasionally used in brake pad formulations	<i>Molykote® Z Powder</i>
Drum Brake Hardware	Used to lubricate sliding metal parts; provides dry film coating	<i>Molykote® 321 Dry Film Lubricant</i>
	Copper containing paste for anti-seize applications	<i>Molykote® Cu-7439 Copper Paste</i>
	Molybdenum disulfide paste for anti-seize applications	<i>Molykote® 1000 High Temp Anti-seize Paste</i>
	Molybdenum disulfide paste that lubricates metal parts during break-in period	<i>Molykote® G-n Paste</i>
Other Applications	Parking brake cables	<i>Dow Corning® 211 Fluid or Molykote® 33 Extreme Low Temp Bearing Grease</i>
	ABS module plunger valve	<i>Molykote® 3451 FS Grease</i>
	Adjustable pedal assembly	<i>Molykote® 106 AF Coating or Molykote® 7409 AF Coating</i>

Complete Automotive Lubricant Expertise



In addition to lubricants for the applications included in this publication, Dow Corning also provides Molykote products for other automotive needs. Call or fax us to discuss your specific requirements. Together we can get things moving.

Lubricants Expertise Center

Dow Corning maintains a 35,000 sq. ft. facility to provide customers with cost-effective specialty lubricant solutions. The Center conducts testing and validation of customer component performance from prototype through production. Our experts offer applications engineering consultation, technical service and application-specific product development. The Center also provides a variety of ASTM, DIN, ISO and other standard

lubricant tests, using specialized equipment and trained technicians. Center expertise also includes application methods, with special emphasis on anti-friction coatings. Personnel at the Center interact daily with our sister facilities in Japan and Germany, as well as research headquarters in Midland. You can be assured of comprehensive technical support anywhere in the world you do business.

A supplier you can count on

As a world-wide supplier, Dow Corning has earned a reputation for providing consistent quality, proven technical service support, proper product labeling and long-term stability. We're a reliable partner who is dedicated to customer service and believes in meeting the highest standards.

How to contact us

For nearly 60 years, OEM designers, maintenance and materials engineers around the world have trusted the Molykote brand for performance and expertise to solve or prevent lubrication problems. Molykote solutions are available through a distributor network of more than 3,000 channel partners around the globe. To learn more about our extensive product and service offering, visit www.molykote.com, or email industrial@dowcorning.com.

Maahantuoja:



Petikontie 20, 01720 Vantaa
Puh. 029 006 230, fax. 029 006 1230
www.ytm.fi, e-mail ytm.info@ytm.fi

Jälleenmyyjä:

LIMITED WARRANTY INFORMATION — PLEASE READ CAREFULLY

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

Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

We help you invent the future is a trademark of Dow Corning Corporation.

Dow Corning, Lubolid and Molykote are registered trademarks of Dow Corning Corporation.

© 2005 Dow Corning Corporation. All rights reserved.

Form No. 65-048B-01