



# **MOLYKOTE®**

## **High-performance Industrial Lubricants**

Application Guide

**MOLYKOTE®**



Pastes | Greases | Compounds | Oils | Coatings | Dispersions

# MOLYKOTE® Products for Maintenance

No matter how aggressive the environment or how extreme the temperature, you can be sure to find a MOLYKOTE® lubricant that meets every need.

When you specify a DuPont maintenance product, you are relying on over 60 years of innovation from a global leader in lubrication technology. With global manufacturing facilities and R&D centers, DuPont's MOLYKOTE® lubricants provide the best for assembly, production, and maintenance. Our technical sales organization will help you select the right lubricant for your specific needs.

DuPont certifies its production units to meet internationally recognized ISO 9001 standards. You can be confident that the products used in your production lines and for their maintenance will deliver consistent, high-quality performance.

For your convenience, these products are easily available through our global distribution network.

With superior product technology, certified quality according to international standards, and on-time delivery capabilities worldwide, it's easy to see why DuPont has received so many recognitions for supply quality.

**Choose the best.  
Choose DuPont's MOLYKOTE®.**

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# Introduction to Lubricants

DuPont’s high-performance MOLYKOTE® lubricants help reduce friction and wear, extend lubrication intervals, and lower maintenance and replacement costs in applications where traditional oils and greases would fall short.

Formulated to withstand high loads, dusty or dirty environments, chemical exposure, as well as extreme temperatures and speeds, MOLYKOTE® lubricants are ideal for regular maintenance lubrication. To choose the best lubricant for your application, let your specific needs guide you:

- Load
- Environment
- Temperature
- Speed



There are six types of lubricants to choose from, each with a different physical form and properties suited for specific applications:

**Pastes** – Grease-like materials containing a high percentage of solid lubricants. Used for assembly and lubrication of heavily loaded, slow-moving parts and threaded connections.

**Greases** – Solid or semi-solid materials consisting of a fluid lubricant, thickener, and additives. Used in bearings and other moving parts.

**Compounds** – Grease-like materials composed of a silicone fluid thickened with amorphous silica. Used for their sealing, electrical insulation, non-stick, and lubrication properties in non-metal parts.

**High-Performance Industrial Lubricating Oils** – Based on hydrogen-treated mineral oils or synthetic oils like polyalphaolefins (PAO) and esters, these fluid lubricants are fortified with carefully selected additives to ensure optimal performance and longevity, maximizing protection for the machinery and equipment they are designed to lubricate.

**Coatings** – Also known as “lubricating lacquers”; these materials harden upon application to form a dry, adherent lubricating film on surfaces.

**Dispersions** – Micronized solid lubricants suspended in lubricating fluids; used when solid lubricants need to be applied in liquid form.

# Selection guide



## Rolling bearings

Applications	Materials	Temperature Range [°C]	Other Considerations	Molykote® Solution
Assembly/Pre-treatment	Metal/metal	-25 to +250	Prevents contact corrosion	TP-42, P-1042
Service	Metal/metal	-30 to +130	General use	Multilub
			General use/high loads	BR2 Plus
		-25 to +140	Humid environments/high loads	G-0102
		-45 to +180	Synthetic/combination of high loads, high temperature, high speed (up to 600,000 DN)	BG-20
		-40 to +150	High speed/long life/low noise	BG-555
		+10 to +160	Washout resistance/low speed	1122
		-30 to +150	"Clean" white food-grade grease NLGI #0, 1, or 2	G-0050 FM, G-0051 FM, G-0052 FM
		-40 to +150	Multi-purpose synthetic/food grade	G-4500, G-1502 FM
		-40 to +150	Multi-purpose synthetic/food grade consistency NLGI #1	G-4501
		-40 to +177	Synthetic/moderate to high loads	G-4700
		-73 to +180	Wide temperature range	33 Light, 33 Medium
		-20 to +290	Very high temperatures	41
		-40 to +200	High temperatures	44 Light, 44 Medium
		-40 to +230	Resistant to solvents	3451
		-35 to +250	High temperatures/chemical resistance	HP-300, HP-870
Storage Protection	Metal components		Protection from corrosion/dry film	Metal Protector Plus



## Press Fit Joints

Applications	Materials	Temperature Range [°C]	Other Considerations	Molykote® Solution
Assembly	Metal/metal	-35 to +450	Very low friction coefficient	G-Rapid Plus
Service	Metal/metal	-25 to +450	Low friction coefficient	G-n Plus
		-25 to +250	White paste	D
		-30 to +300	White/food grade	P-1900

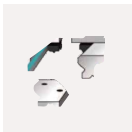






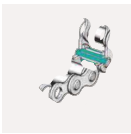
## Maintenance

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Screw Assembly	Metal/metal	-30 to + 650	General use	1000
		-25 to + 250	White paste	D
		-30 to + 300	White/food grade	P-1900
			Constant assembly torque	1000
		-40 to + 1400	Non-corrosive/extreme temperatures/sulfur and metal-free	P-37, P-3700
Interference Fit Assembly	Metal/metal	-35 to + 450	Very low friction coefficient	G-Rapid Plus
		-25 to + 450	Low friction coefficient	G-n Plus
		-25 to + 250	White paste	D
		-30 to + 300	White/food grade	P-1900
Disassembly	Metal/metal	-50 to + 50	Loosens corroded parts, dissolves rust	Multigliss, Supergliss
Corrosion Protection	Metal/metal	-30 to + 300	Corrosive environments	Cu-7439 Plus
Storage: Corrosion Protection	Metal/metal		Long storage intervals	Metal Protector Plus
Contaminated Components	Metal/metal		Good cleaning power	Metal Cleaner
Electrical Component Contamination	Metal/metal		Good cleaning power	S-1002
Oil-Lubricated Components	Metal/metal	Depends on the oil it is added to	High loads	M-55 Dispersion
Adhesion of Rubber and Plastic Parts	Metal/ plastic - rubber	-40 to + 200	Silicone lubricant and release agent	Separator Spray
Repair of Galvanized Surfaces	Metal/metal	-30 to + 240	Corrosion protection	L-0500



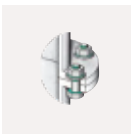
## Linear motion systems

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Service	Metal/ metal	-25 to +120	General use	Multilub
		-25 to +110	High loads	Longterm 2 Plus
		-40 to +180	High temperatures	BG-20
		-65 to +175	High wear for intermittent service	3402C
Pre-treatment				



## Chains

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Grease Chains	Metal/ metal	+10 to +160	Washout resistance/high speed	1122
		-25 to +150	High speed/good penetration	MKL-N
		-40 to +230	Adhesive paste/wide temperature range/ water resistant	P-40 V1
		-180 to +450	Long-lasting lubrication	D-321 R
Oil Chains	Metal/ metal		High temperature chains with MoS2	M-30
			Extreme loads/high MoS2 content	M-55 Dispersion
		-10 to +230	High temperature/low volatility/no odor	CO-220
		-50 to +120	Wide temperature range/PAO/food grade/adhesive	L-1232, L-1246
		-30 to +250	High temperature chain oil	L-1428
			Metal/metal	Metal Protector Plus



## Screws and threaded connections

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Service	Metal/ metal	-30 to + 650	High temperatures/no torque dispersion mounting	1000
		-30 to + 1100	High temperatures/general use/does not contain lead or nickel	HSC Plus
		-25 to + 250	White paste	D
		-30 to + 300	White/food	P-1900
		-40 to + 1500	Very high temperatures/compatible with wide range of high temperature steels	P-74
	Alluminio o acciaio inox	-40 to + 1400	Non-corrosive/temperature extremes/ free of sulphur and metals	P-37, P-3700
Disassembly	Metal/ metal		Loosens corroded parts loosens rust	Multigliss
Storage Protection	Componenti metallici		Corrosion protection/dry film	Metal Protector Plus



## Power Screw Drives

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Service	Metal/ metal	-30 to +130	General use	Multilub
		-30 to +130	General use/high loads	BR-2 Plus
		-25 to +250	White paste	D
		-40 to +150	Multi-purpose synthetic/food grade	G-4500
		-180 to +450	Dusty environment/extreme pressures	D-321 R
		-73 to +180	Wide temperature range/long life	33 Light, 33 Medium
	Plastic/ metal Plastic/ plastic	-40 to +150	Multi-purpose synthetic/food grade	G-4500
		-40 to +230	Chemical resistance	3451
			Does not stain/dry film	Metaform
Storage Protection	Metal components		Corrosion protection/dry film	Metal Protector Plus



## Gears

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Pre-treatment	Metal/ metal	-25 to +450	Running-in lubricant	G-Rapid Plus
		-40 to +150	Multi-purpose synthetic/food grade	G-4500, G-1502 FM
		-40 to +177	Synthetic lubricant/high loads	G-4700
		+10 to +160	Adhesive grease	1122
		-40 to +230	Adhesive paste/wide temperature range/ water resistant	P-40 V1
		-180 to +450	Dusty environment	D-321 R
		-70 to +250	Cures with temperature	106
	Metal/ plastic	-40 to +130	General use semi-synthetic	PG-75
		-50 to +140	General use synthetic	G-2003, AI-6159
		-45 to +130	General use synthetic/high loads/ reinforced with fibers	EM-30L, G-1074
		-45 to +150	General use synthetic/high loads/ good adhesion	YM-103, G-1074, G-1067
		-73 to +180	Wide temperature range/low friction	33 Light, 33 Medium
		-35 to +250	Very high temperatures/excellent compatibility/ chemical resistant	HP-870
Closed gears	Metal/ metal		Extreme loads/reduces energy consumption	M-55 Dispersion
			Synthetic/food grade	G-1502 FM
Storage Protection	Metal components		Corrosion protection/dry film	Metal Protector Plus



## Linear guides

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Service	Metal/ metal	-30 to +150	"Clean" white food-grade grease	G-0052 FM
		-25 to +250	"Clean" white paste	D
		-30 to +300	"Clean" white food-grade paste	P-1900
		-30 to +650	High temperatures	1000
		-25 to +450	High loads	G-n Plus
		-40 to +150	Multi-purpose synthetic/food grade/ moderate loads	G-4500
		-40 to +177	Synthetic lubricant/high loads	G-4700
		-180 to +450	Dusty environment/extreme pressures	D-321 R
			Non-staining	Metaform
	Plastic/ plastic	-40 to +150	Multi-purpose synthetic/food grade	G-4500
		-40 to +150	Multi-purpose synthetic/food grade	G-4501
			NLGI #1 consistency	
		-73 to +180	Wide temperature range/long life	33 Light, 33 Medium
Storage Protection	Metal components		Corrosion protection/dry film	Metal Protector Plus



## Control cables

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Service		-40 to +130	General use semi-synthetic	PG-75
		73 to +180	Wide temperature range/low friction	33Light, 33 Medium
		-180 to +450	Dusty environment/low friction	D-321R
		-40 to +150	Multi-purpose synthetic/food grade	G-4500
Storage Protection	Metal components		Corrosion protection/dry film	Metal Protector Plus



## Plain Bearings, Bushings & Sleeves

Applications	Materials	Temperature Range[°C]	Other Considerations	Molykote® Solution
Pre-treatment	Metal/ metal	-25a + 450	Running-in lubricant	G-Rapid Plus
		-25a + 250	"Clean" running-in lubricant	D-321 R
		-70a + 200	Solvent-free running-in lubricant	7400
		-180a + 450	Dusty environment	D-321 R
Service	Metal/ metal	-30a + 130	General use	BR-2 Plus
		-45a + 180	General use synthetic	BG-20
		-30a + 150	"Clean" white food-grade grease	G-0052 FM
		-40a + 230	Adhesive paste/wide temperature range /water resistant	P-40 V1
		-25a + 250	"Clean" white food-grade paste	P-1900
		-25a + 250	Prevents contact corrosion	TP-42, P-1042
		-40a + 150	Multi-purpose synthetic/food grade	G-4500
	Plastic /rubber	-40a + 150	Synthetic lubricant/high loads	G-4700, AI-6159
		-40a + 230	Chemical/solvent resistant	3451
		-40a + 130	Multi-purpose semi-synthetic	PG-75
		-50a + 140	Multi-purpose synthetic	G-2003, G-1057
		-45a + 130	Multi-purpose synthetic/high loads/ reinforced with fibers	EM-30L, G-1074
		-45a + 150	Multi-purpose synthetic/high loads/ good adhesion	YM-103, AI-6159
		-73a + 180	Wide temperature range	33 Light, 33 Medium
Storage Protection	Metal components	-40a + 230	Solvent resistant	3451
		-40a + 200	Washout resistance/low speed	111, G-5511
		-35a + 250	Very high temperatures/excellent compatibility /chemical resistant	HP-870, HP-300
			Corrosion protection/dry film	Metal Protector Plus



## Pastes

Pastes contain a high concentration of solid lubricants in oil, making them easy to apply. In situations where oils and greases are displaced from contact points, the solid lubricants in pastes form a tough, adherent film that helps prevent wear under extreme loads and low-speed conditions. They are primarily used during assembly and the running-in process.



## Thread pastes

### Molykote® 1000

**Description** – Solid lubricant paste for threaded metal fittings; does not contain lead or nickel. Maintains a constant coefficient of friction even after use.

**Applications** – Ideal for threaded fittings exposed to high temperatures up to 650°C, corrosive environments, and applications where components need to be re-tightened or disassembled after initial assembly and operation. To ensure consistent clamping forces, a lubricant with uniform and stable friction coefficients is required. Successfully used for cylinder head bolts, extruder screws in plastic injection molding machines, threaded fittings in the chemical industry, and tension rings in centrifuges.

**Features** – Usable across a wide temperature range. High load resistance. Allows for non-destructive disassembly of threaded connections even after prolonged exposure to high temperatures. Maintains a constant coefficient of friction in lubricated bolts, even after multiple tightening and loosening operations. Good corrosion protection.

**Composition** – Solid lubricants; mineral oil; thickener; metallic powder.

**Temperature range** – from -30°C to +650°C.

### Molykote® HSC Plus

**Description** – Solid lubricating paste; free of lead and nickel.

**Applications** – Suitable for lubrication points with low speeds, exposed to high temperatures and corrosive conditions, and requiring a low and consistent friction coefficient. Also serves as a contact lubricant for electrically conductive components. Successfully used for stud bolts in gas and steam turbines, turbochargers in diesel engines, and flanged connections in chemical and electrochemical plants.

**Features** – Usable across a wide temperature range; enables non-destructive disassembly of threaded joints even after prolonged exposure to high temperatures; high load-bearing capacity; the consistent, predetermined friction coefficient allows threaded connections to achieve the desired tension; good corrosion protection; excellent electrical conductivity.

**Composition** – Solid lubricants; mineral oil; thickening agents; metallic powder (lead-free).

**Temperature range** – from -30 to +1100°C

### Molykote® P-37

**Description** – Extremely pure solid lubricating paste for threaded joints. It does not contain lead, nickel, sulfur, chlorine, or fluorine.

**Applications** – Suitable for screws, nuts, and bolts exposed to extremely high temperatures and made of heat-resistant or highly heat-resistant steel, such as nickel-based alloys. Successfully used in threaded connections of gas and steam turbines in power and nuclear plants.

**Features** – High degree of purity (less than 500 mg of sulfur, less than 200 mg of chlorine and fluorine per kg of lubricant); usable at temperatures up to 1400 °C; friction coefficient comparable to oiled screws; low dispersion of preload during tightening; prevents internal stress cracks and welding-induced brittleness; allows non-destructive disassembly of threaded joints even after prolonged exposure to high temperatures.

**Composition** – Sulfur-free solid lubricants; partially synthetic oil; thickener; adhesion promoter.

**Temperature range** – from -40 to +1400 °C

### Molykote® P-3700

**Description** – Extremely pure solid lubricating paste for threaded joints. It does not intentionally contain calcium-based compounds.

**Applications** – Suitable for screws, nuts, and bolts exposed to extremely high temperatures and made of heat-resistant or highly heat-resistant steel, such as nickel-based alloys. Successfully used in threaded connections of gas and steam turbines in power and nuclear plants.

**Features** – High degree of purity (less than 500 mg of sulfur, less than 200 mg of chlorine and fluorine per kg of lubricant); usable at temperatures up to 900 °C; friction coefficient comparable to oiled screws; low preload dispersion during tightening; prevents internal stress cracks and welding-induced brittleness; allows non-destructive disassembly of threaded joints even after prolonged exposure to high temperatures.

**Composition** – Calcium-free solid lubricants; partially synthetic oil; thickener; adhesion promoter.

**Temperature range** – from -30 to +900 °C.



## Molykote® P-74

**Description** – Solid lubricant paste used for the assembly and fitting of a wide range of components, such as threaded metal connections.

**Applications** – Suitable for various industrial applications, including the chemical, petrochemical, paper, and automotive industries, as well as woodworking, plastic processing, and mechanical engineering. Used on threaded connections, sliding bearings, linear guides, threaded shafts, press-fitted connections, discharge screws, spark plug threads, flanges and flange seals, door hinges, braking mechanisms, and flat springs.

**Features** – Metal-free. Good corrosion protection. High load resistance. Coefficient of friction similar to oiled screws. Low preload loss during tightening. Prevents stress cracks and embrittlement due to welding. Wide operating temperature range.

**Composition** – Solid lubricants; synthetic oil; thickener; adhesion promoter.

**Temperature range** – from -40°C to +200°C as a paste, and up to +1500°C as a solid lubricant.

## Assembly Pastes

## Molykote® G-n Plus

**Description** – Solid lubricating paste for the assembly and running-in of metal parts.

**Applications** – Suitable for assembling all types of mechanical parts and as a running-in lubricant for new machinery and gearboxes; recommended as a permanent lubricant for mechanical parts that are rarely or only slightly disassembled; also suitable for drilling, sawing, and threading. Proven effective for lubricating threaded spindles, threaded shafts, toothed gears, worm gears, transmission gears, screws, valves, pumps, machine tool guides, as well as for tightening and adjusting roller bearings, washers, wheels, flanges, and screws.

**Features** – High load-bearing capacity; low friction coefficient; prevents frictional corrosion and scoring; anti-seizure protection; good anti-corrosive properties; reduces frictional corrosion; simplifies disassembly operations.

**Composition** – Mineral oil; thickener; solid lubricants.

**Temperature range** – from -25 to +450 °C.

## Molykote® G-Rapid Plus

**Description** – Paste with solid lubricants and an exceptionally low friction coefficient, designed for the assembly and running-in of metal components.

**Applications** – Suitable for assembling all types of mechanical parts and as a running-in lubricant for new machinery and gearboxes. Recommended as a permanent lubricant for mechanical parts that are rarely or only minimally disassembled; also suitable for drilling, sawing, and threading. Highly effective for lubricating threaded spindles, threaded shafts, toothed gears, worm gears, transmission gears, screws, valves, pumps, machine tool guides, as well as for tightening and adjusting roller bearings, washers, wheels, flanges, and screws.

**Features** – Low friction coefficient; high load-bearing capacity; prevents seizing and scoring; eliminates stick-slip; reduces oxidation from friction; ensures emergency operation capability.

**Composition** – Mineral oil; solid lubricants.

**Temperature Range** – from -35 to +450 °C.

## Molykote® D

**Description** – Light-colored solid lubricating paste for the assembly and running-in of metal parts.

**Applications** – Suitable for sliding surfaces and contact points under heavy loads that require "clean" lubrication, especially at low speeds; also recommended as a running-in lubricant. Used effectively on numerous friction points in electrical equipment, household appliances, office machines, and packaging machinery, as well as in precision instruments, food and beverage processing machinery, textile and plastic processing machinery. Recommended for use alongside MOLYKOTE® DX multi-purpose white grease in cases where applying a thin film of lubricant is not possible. The product can be applied with a brush, cloth, or cartridge grease gun.

**Features** – High load-bearing capacity; prevents frictional corrosion and seizing; good corrosion protection; excellent protection against wear from stretching and contact; clarity.

**Composition** – Mineral oil; thickener; solid lubricants.

**Temperature range** – from -25 to +250 °C

## Molykote® M-77

**Description** – Paste with solid lubricants and silicone oil.

**Applications** – Suitable for lubrication points with medium/low loads and speeds exposed to extreme temperatures and water washout; at temperatures above 230 °C, the oil base evaporates, leaving almost no residue, while the remaining dry sliding film ensures lubrication up to +450 °C. Suitable for lubricating parts made of materials not resistant to mineral oils. This product is successfully used on metal-to-metal contact and friction points, including disc and drum braking systems.

**Features** – Good water resistance; effective evaporation properties; compatible with many types of elastomers and plastics.

**Composition** – Silicone oil; lithium soap; solid lubricants.

**Temperature range** – from -45 to +230 °C as a paste, up to +450 °C as a solid lubricant.



## Molykote® U-n

**Description** – Paste with solid lubricants in synthetic oil.

**Applications** – Designed for assembling, running-in, and permanently lubricating components exposed to high temperatures; suitable for dry lubrication of bearings (low speed), sliding guides, and joints at temperatures above +200 °C. At higher temperatures, the oil base evaporates, leaving almost no residue, and the remaining dry anti-friction film provides lubrication up to +450 °C, and even beyond if in an oxygen-free environment. Since the paste has a synthetic oil base, it is also suitable for lubricating components made from materials that are not resistant to mineral oils.

**Features** – Dry lubrication up to +450 °C; reduces friction and wear; low friction coefficient; high load-bearing capacity; compatible with some types of plastics and natural rubber (compatibility testing is recommended before use).

**Composition** – Polyalkylene glycol oil; lithium soap; solid lubricants.

**Temperature range** – from -40 to +450 °C, up to +630 °C in low-oxygen conditions.

## Grease Pastes

### Molykote® DX

**Description** – Light-colored greasing paste with solid lubricants for assembly and long-term lubrication of metal components.

**Applications** – Suitable for sliding surfaces and friction points under heavy loads that require “clean” lubrication, especially at low to medium speeds. Proven effective on numerous friction points in electrical equipment, household appliances, office machines, packaging machinery, precision instruments, as well as machinery in the food and beverage, textile, and plastics industries.

**Features** – Very high load-bearing capacity; good resistance to water and water washout; prevents frictional corrosion and seizing; good corrosion protection; excellent wear protection; clarity.

**Composition** – Mineral oil; lithium soap; solid lubricants; corrosion inhibitor.

**Temperature range** – from -25 to +125 °C.

### Molykote® E

**Description** – Light-colored solid lubricating paste.

**Applications** – Designed for long-term and permanent lubrication of metal/plastic and plastic/plastic combinations. Suitable for plain bearings and contact points under high compression loads, including dry metal/metal and plastic/plastic combinations, as well as metal/oil-resistant rubber combinations. Ideal for glass fiber-reinforced plastic elements. Successfully used for automatic car antennas, car seat adjustment mechanisms, switches, ski bindings, furniture hinges, as well as plain bearings, bushings, and gears in household appliances.

**Features** – Low friction coefficient; high load-bearing capacity; compatible with most plastics; no drop point, meaning it will not melt or leak from lubrication points; provides long-lasting lubrication due to high oxidation resistance and low evaporation tendency; good resistance to low temperatures.

**Composition** – Polyalphaolefin; organic thickener; EP additives; solid lubricants.

**Temperature range** – from -50 to +160 °C.



### Molykote® Cu-7439 Plus V1

**Description** – Copper paste for components exposed to high temperatures and pressure.

**Applications** – Suitable for surfaces requiring protection from water, steam, and corrosion, such as braking mechanisms, flange seals, and exhaust manifold bolts.

**Features** – Wide operating temperature range; good pressure resistance; highly adhesive and water washout-resistant; good corrosion protection; low evaporation; no drop point.

**Composition** – Partially synthetic oil; copper powder; inhibitor.

**Temperature range** – from -30 to +300 °C as a paste, up to +650 °C as a solid lubricant.

### Molykote® TP-42

**Description** – Adhesive, light-colored greasing paste with solid lubricants for metal parts subjected to wear.

**Applications** – Suitable for sliding surfaces exposed to high loads and the influence of water-based metalworking emulsions. Recommended and successfully used by leading clamping element manufacturers, especially for spindles in metalworking machinery.

**Features** – High load-bearing capacity; highly adhesive; particularly resistant to washout and metalworking emulsions; prevents stick-slip; good corrosion protection; excellent wear protection.

**Composition** – Mineral oil; synthetic oil; lithium soap; solid lubricants; adhesion promoter.

**Temperature range** – from -25 to +250 °C.

### Molykote® P-1042

**Description** – Light-colored grease paste enriched with solid lubricants, providing excellent adhesion to metal surfaces.

**Applications** – Suitable for sliding surfaces exposed to high-pressure loads and subject to water or metalworking emulsions.

**Features** – High load capacity; exceptional resistance to washout by water and metalworking emulsions; prevents tribocorrosion; prevents stick-slip; excellent protection against galling; good corrosion protection; good protection against fretting; good water resistance; high load capacity; high adhesiveness and adhesion.

**Composition** – Mineral oil, polyalphaolefin (PAO).

**Temperature range** – from -25 to +500 °C.



## Molykote® P-40 V1

**Description** – Metal-free adhesive lubricating paste suitable for all types of assembly and operational lubrication, especially in corrosive environments, such as in the presence of water spray or humidity.

**Applications** – Assembly of threaded connections, splined shafts, bearing mounting; operational lubrication; various brake system parts, brake rods, control screws; commercial vehicle axles, cams, and plain bearings; open gears; marine applications.

**Features** – Excellent adhesion; good corrosion protection; good water resistance; good resistance to contact corrosion; suitable for assembly and operational lubrication; metal-free; low water pollution class.

**Composition** – Semi-synthetic oils; solid lubricants; corrosion inhibitor.

**Temperature range** – from -40 to +230 °C as a paste, up to +1200 °C as a solid lubricant.

## Molykote® P-1500

**Description** – White grease paste that combines a wide temperature range with excellent resistance to contact corrosion.

**Applications** – Suitable for assembly and operational lubrication of metal components; sliding surfaces and contact points under heavy loads requiring "clean" lubrication, particularly at low and medium speeds. Used on friction points in household and electrical components, packaging and office machinery, precision instruments, the textile and plastics industries, and for lubricating components in the automotive industry.

**Features** – Wide operating temperature range; high load capacity; good water resistance and washout resistance; excellent protection against contact corrosion and wear; prevents stick-slip and scoring.

**Composition** – Semi-synthetic oil; lithium soap; solid lubricants.

**Temperature range** – from -50 to +160 °C.

## Molykote® P-1900

**Description** – White grease paste with solid lubricants.

**Applications** – Suitable for lubricating mechanical components in the food and beverage industry; sliding surfaces and friction points under high loads, particularly at low and medium speeds.

**Features** – Low friction coefficient; good water resistance; high load capacity; meets FDA requirements under 21 CFR 178.3570 and is NSF H1 registered for "incidental food contact."

**Composition** – Mineral oil; aluminum complex thickener; solid lubricants.

**Temperature range** – from -30 to +300 °C.

## Molykote® X

**Description** – Grease paste with solid lubricants for lubricating parts subject to metal friction and operating under high surface pressures.

**Applications** – Suitable for guides and plain bearings under high loads, splined shafts, screws, and joint pins, particularly at low to medium speeds. Successfully used on guides and sliding pads in bridge handling systems.

**Features** – High load-bearing capacity; good water resistance and washout resistance; protection against seizing and premature wear; excellent corrosion protection.

**Composition** – Mineral oil; lithium soap; solid lubricants; EP additives; corrosion inhibitor.

**Temperature range** – from -30 to +135 °C.

## Other Pastes

## Molykote® HTP

**Description** – Paste with solid lubricants for hot metal stamping.

**Applications** – Suitable for lubricating hot stamping tools, particularly in hot sliding presses and die forging, and as a release agent and sliding additive at high temperatures. Successfully used for hot bending of steel sheets (St 37 or St 70), rolling spring ends for vehicle leaf springs, bending metal sheet edges, hot rolling of blades, die forging of flywheels made of St 37, and lubricating separation walls in particleboard presses.

**Features** – High-temperature resistance (up to 1150 °C as a solid lubricant); reduces friction and wear; minimizes scoring; extends tool life.

**Composition** – Mineral oil; thickener; solid lubricants.

**Temperature range** – from -20 to +1150 °C.

## Greases

No matter your industry— whether food, chemical, mechanical, or otherwise—we offer the products and services to enhance your production. A lubricating grease is a semi-solid product consisting of a thickening agent dispersed in a fluid lubricant. Grease functions by releasing the lubricating fluid from the thickener, providing lubrication where using an oil is impractical or impossible. MOLYKOTE® high-performance lubricating greases are specifically designed for extreme conditions, such as high pressures, aggressive chemical environments, and very high or low temperatures, as well as for all possible speeds. Moreover, MOLYKOTE® greases are based on either mineral oils or synthetic fluids, including silicone oils. Many MOLYKOTE® greases contain special additives and/or solid lubricants, like molybdenum disulfide, to ensure highly effective lubrication.



## Mineral Oil-based Greases

### Molykote® Multilub

**Description** – Grease for medium/heavy loads.

**Applications** – Suitable for lubricating contact points with light to medium loads and low to high speeds, even in the presence of moisture and spray. Used on roller bearings, plain bearings, sliding guides, roller guides, spherical joints, splined shafts, and threaded spindles. Also used for lubricating crane frames, forklifts, and lifting equipment.

**Features** – Good load-bearing capacity; suitable for long-term lubrication due to low oil evaporation; good water washout resistance; good corrosion protection; good oxidation resistance; reduces wear and scoring issues.

**Composition** – Mineral oil; lithium soap; EP additives; corrosion inhibitor.

**Temperature range** – from -25 to +120 °C.

### Molykote® BR2 Plus

**Description** – High-performance grease with solid lubricants for metal-to-metal combinations under slow to fast movements and medium to heavy loads.

**Applications** – Used on roller bearings, plain bearings, sliding guides, roller guides, spherical joints, splined shafts, and threaded spindles.

**Features** – High load-bearing capacity; suitable for long-term lubrication; good oxidation resistance; emergency operating properties, such as in mixed friction conditions, offering wear protection through solid lubricants and EP additives; good resistance to seizing; good water washout resistance; effective protection against fretting oxidation.

**Composition** – Mineral oil; lithium soap; solid lubricants; EP additives; corrosion inhibitor.

**Temperature range** – from -30 to +130 °C, up to +150 °C for short periods.

### Molykote® Longterm 00

**Description** – Fluid grease for lubricating highly stressed transmissions with metal gears.

**Applications** – Successfully used in enclosed gears subjected to high stress, frictional corrosion, and moisture.

**Features** – Extremely high load resistance; wear resistance in mixed friction conditions; wear protection through solid lubricants and extreme pressure additives; extremely adhesive due to incorporated adhesion agent; good corrosion protection; lead- and nickel-free.

**Composition** – Mineral oil; lithium soap; solid lubricants; corrosion inhibitor; adhesion promoter; EP additives.

**Temperature range** – from -40 to +110 °C.

### Molykote® Longterm 2/78G

**Description** – High-performance grease for metal-to-metal couplings with slow to moderate movements and moderate to high loads.

**Applications** – Suitable for friction couplings with moderate loads and speeds, subject to contact corrosion, brinelling, or humidity. Successfully used in automotive and truck joints.

**Features** – High load capacity; suitable for long-term lubrication without oxidation tendency; contact corrosion resistance; good corrosion protection; lead- and nickel-free.

**Composition** – Mineral oil; lithium/zinc soap thickener; solid lubricants; corrosion inhibitor; oxidation inhibitor.

**Temperature range** – from -35 to +130 °C.

### Molykote® Longterm 2 plus

**Description** – Lubricating grease for metal-to-metal combinations with slow to medium-fast movements and medium loads.

**Applications** – Successfully used in bearings for machinery in the food and pharmaceutical industries, textile or paper manufacturing machines, household appliances, and precision mechanical instruments.

**Features** – Good load-bearing capacity; suitable for long-term lubrication due to low evaporation tendency; wear protection from solid lubricants; strong adhesion due to incorporated adhesion promoter; good corrosion protection; prevents contact corrosion.

**Composition** – Mineral oil; lithium soap; solid lubricants; adhesion promoter.

**Temperature range** – from -30 to +110 °C, up to +130 °C for short periods.

### Molykote® Longterm White 2

**Description** – White lubricating grease for metal-to-metal combinations with slow to fast movements and medium loads.

**Applications** – Successfully used in bearings for machinery in the food and pharmaceutical industries, textile and paper production machines, household appliances, and precision mechanical instruments.

**Features** – Good load capacity; suitable for long-term lubrication; oxidation-resistant; wear protection from solid lubricants; strong adhesion due to incorporated adhesion enhancer; good corrosion protection; prevents fretting corrosion.

**Composition** – Mineral oil.

**Temperature range** – from -30 to +110 °C.

### Molykote® 1102

**Description** – Grease for gas valves and taps with metal, glass, and plastic combinations.

**Applications** – Successfully used in gas taps on main and secondary lines of household appliances, instant water heaters, or similar equipment; lubrication of small taps made of metal, glass, or plastic.

**Features** – Highly water-resistant; no drop point, preventing melting or leakage from lubrication points.

**Composition** – Mineral oil; inorganic thickener; solid lubricants.

**Temperature range** – from 0 to +160 °C, up to +220 °C for short periods.

### Molykote® 1122

**Description** – Synthetic grease with solid lubricants.

**Applications** – Used for the initial lubrication of chains with hollow pins equipped with grease fittings, such as clamp chains in textile drying machines and conveyor belts in food sterilization departments. Also used for gear transmissions, open gears, and plain bearings operating at low speeds and high temperatures, such as bearings in drying systems and calendering machines used in various industrial processes.

**Features** – Emergency lubrication; high pressure resistance; excellent wear protection; extremely adhesive; water-resistant.

**Composition** – Synthetic oil; inorganic thickener; solid lubricants; adhesion promoter.

**Temperature range** – from +10 to +160 °C.

## Molykote® 165LT

**Description** – Grease for gear wheels used for the lubrication of gear reducers and open gears under heavy loads, made of metal, with a peripheral speed up to 2.5 m/s.

**Applications** – Open gears subject to heavy loads and environmental exposure; successfully used in crushing plants, drive gears, and the threaded spindles of heavy crank presses.

**Features** – Extremely high load resistance; protection against wear and reduction of pitting on gear tooth flanks during operation, thanks to the solid lubricants incorporated in the grease; extremely adhesive due to the incorporated adhesion promoter; good corrosion protection; free from lead and nickel.

**Composition** – Mineral oil; lithium soap; solid lubricants; corrosion inhibitor; adhesion promoter; EP additives.

**Temperature range** – from -25 to +120°C.

## Molykote® G-0050 FM

**Description** – A white grease with NLGI 0 consistency designed for multi-purpose bearing lubrication, specifically tailored for the food and beverage industry. This mineral-based grease uses an aluminum complex thickener and is fortified with EP additives. This unique formulation makes it an excellent choice for achieving NSF H1 approval for incidental food contact, without the use of black solid lubricants.

**Applications** – Ideal for the lubrication of mechanical components in the food, beverage, and pharmaceutical industries. Specifically developed for centralized lubrication systems.

**Features** – Excellent lubricating properties. Good resistance to water washout. High load-carrying capacity. Compatible with most elastomers and plastics. Compliant with FDA regulation 21 CFR 178.3570 and registered with NSF under category H1 for "incidental food contact."

**Composition** – Mineral oil; Aluminum complex thickener; EP/AW additives.

**Temperature range** – From -20°C to +150°C.

## Molykote® G-0051 FM

**Description** – NLGI Grade 1 consistency version of G-0050 FM grease, also certified NSF H1 for incidental food contact.

**Applications** – Designed for the lubrication of mechanical components in the food, beverage, and pharmaceutical industries. Suitable for multi-purpose lubrication of components such as bearings, chains, gears, and slides in food and beverage processing equipment.

**Composition** – Mineral oil; Aluminum complex thickener; EP/AW additives.

**Temperature range** – From -17°C to +150°C.

## Molykote® G-0052 FM

**Description** – NLGI Grade 2 consistency version of G-0050 FM grease, also certified NSF H1 for incidental food contact.

**Applications** – Multi-purpose lubrication of mechanical components such as bearings, chains, gears, and sliding guides in food and beverage processing equipment.

**Composition** – Mineral oil; Aluminum complex thickener; EP/AW additives.

**Temperature range** – From -17°C to +150°C.

## Molykote® G-0102

**Description** – Mineral oil-based grease with a calcium complex thickener. It is suitable for a wide temperature range and offers excellent water washout resistance. This product provides good wear and corrosion protection.

**Applications** – Suitable for use in: Water processing plants. Dams and sluice gates. Chemical industries (cooling and condensation systems). Steel mills and mining operations.

**Features** – Excellent water resistance. High load-carrying capacity. Effective corrosion prevention. Excellent thermal stability.

**Composition** – Mineral oil; Calcium complex thickener; Corrosion inhibitor; EP additives.

**Temperature range** – From -25°C to +140°C.

## Molykote® G-67

**Description** – Soft, adhesive grease with solid lubricants designed for extreme pressure applications.

**Applications** – Suitable for use in: Cylindrical gear transmission systems. Load-bearing chains. Compensation shims. Springs. Shaft/hub couplings. Enclosed fittings. Gears. Linear guides

**Features** – Excellent protection against contact corrosion. Good load-bearing capacity. High level of wear protection. Exceptionally adhesive

**Composition** – Mineral oil; Lithium soap; Adhesion promoter; Solid lubricants.

**Temperature range** – From -25°C to +120°C.

## Semi-synthetic Greases

## Molykote® G-68

**Description** – Partially synthetic grease designed for enclosed steel and plastic gears.

**Applications** – Used in: Gears of electric toothbrushes. Paper cutting machines

**Features** – Good water resistance. Low friction coefficient. Excellent compatibility with most plastics.

**Composition** – Mineral oil; Polyalphaolefin (PAO); Lithium soap; EP additives; Solid lubricants.

**Temperature range** – From -30°C to +140°C.

## Molykote® PG-75

**Description** – Lubricating grease for plastic/plastic and plastic/metal combinations with slow to medium-speed movements and light loads.

**Applications** – Used in automotive ball joints.

**Features** – Suitable for long-term lubrication. Excellent low-temperature performance. Very low friction coefficient. Compatible with most plastics and elastomers

**Composition** – Mineral oil; Polyalphaolefin (PAO); Lithium soap; Solid lubricants.

**Temperature range** – From -40°C to +130°C.



## Synthetic Greases (PAO)

### Molykote® EM-30L

**Description** – High-performance grease for plastic/plastic, plastic/metal, and rubber/metal combinations, subjected to medium-speed movements and high loads.

**Applications** – Suitable for lubrication points with medium to high loads and low to medium speeds.

**Features** – Free of lead and nickel. High load-carrying capacity. Suitable for long-term lubrication due to low oxidation tendency. Low friction coefficient. Compatible with most plastics and elastomers.

**Composition** – Polyalphaolefin (PAO); Lithium soap; Solid lubricants.

**Temperature range** – From -45°C to +150°C.

### Molykote® EM-50L

**Description** – Grease based on synthetic hydrocarbon oil and lithium soap. Exhibits excellent compatibility with plastic materials such as polyacetals and polyamides. Formulated to enhance surface adhesion and reduce noise.

**Applications** – Designed for plastic/plastic and plastic/metal components in electromechanical parts, such as small gears and moving components in printers, tape storage devices, and CD players.

**Features** – Wide operating temperature range. Compatible with most plastics. Good lubricating properties. Formulated to improve surface adhesion. Damping properties.

**Composition** – Polyalphaolefin (PAO); Lithium soap.

**Temperature range** – From -40°C to +150°C.

### Molykote® EM-60L

**Description** – Synthetic grease designed for low-temperature applications, containing solid lubricants.

**Applications** – Suitable for use in:

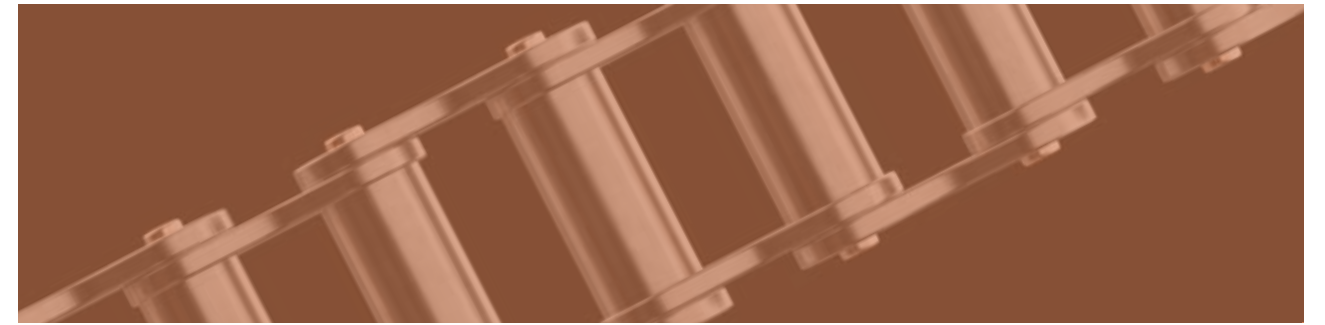
Autofocus systems of video cameras

Electric motors operating at low temperatures

**Features** – Very low torque at extremely low temperatures. High pressure resistance. Low friction coefficient. Compatible with most plastics. Suitable for long-term lubrication.

**Composition** – Polyalphaolefin (PAO); Lithium soap; Solid lubricants.

**Temperature range** – From -60°C to +130°C.



### Molykote® G-4500

**Description** – Special lubricant offering the advantage of usability across a wide range of operating temperatures and compatibility with various materials.

**Applications** – Designed for long-term lubrication in assembly and maintenance. Ideal for use in food industry machinery such as mixers, motors, conveyor belts, low-temperature equipment, packaging machines, and other applications where grease is preferred. Widely used in the furniture industry, instrumentation manufacturing, photographic equipment, and optical device production.

**Features** – Multifunctional properties. Wide operating temperature range. Compatible with a broad range of materials. Compliant with FDA regulation 21 CFR 178.3570 and suitable as a lubricant for incidental food contact.

**Composition** – Polyalphaolefin (PAO); Aluminum complex thickener; Solid lubricants.

**Temperature range** – From -40°C to +150°C.

### Molykote® G-4501

**Description** – Special lubricant offering versatility for use across a wide range of operating temperatures and compatibility with various materials.

**Applications** – Provides long-term lubrication for assembly and maintenance. Suitable for machinery in the food industry, such as mixers, motors, conveyor belts, low-temperature equipment, and packaging machines, as well as other applications where grease is preferred. Widely used in the furniture industry, instrumentation manufacturing, photography equipment, and optical device production.

**Features** – Multifunctional properties. Wide range of operating temperatures. Compatible with a broad variety of materials. Compliant with FDA regulation 21 CFR 178.3570 and suitable for incidental food contact.

**Composition** – Polyalphaolefin (PAO); Aluminum complex thickener; Solid lubricants.

**Temperature range** – From -40°C to +150°C.

### Molykote® G-4700

**Description** – Special lubricant offering versatility for use across a wide range of operating temperatures and compatibility with various materials.

**Applications** – Suitable for long-term lubrication in assembly and maintenance, particularly in non-food contact applications. Ideal for metalworking machinery, motors, fans, blowers, conveyors, wheel bearings, and specialized equipment requiring continuous lubrication.

**Features** – Multifunctional properties. Wide operating temperature range. Compatible with a broad variety of materials. Compliant with Cincinnati Machine P-64, Ford ESA-MIC75-B, GM998525H standards.

**Composition** – Polyalphaolefin (PAO); Lithium complex thickener; Solid lubricants.

**Temperature range** – From -40°C to +177°C.

## Molykote® G-2003

**Description** – Synthetic oil-based grease with a lithium thickener. It delivers excellent performance at low temperatures and provides effective protection against corrosion and wear. The absence of solid lubricants makes it suitable for small to medium bearings operating at high speeds.

**Applications** – High-performance grease for plastic/metal and plastic/plastic pairings in medium to high speeds and moderate loads.

**Features** – Excellent low-temperature properties. Good water resistance. Suitable for long-term lubrication due to low oil evaporation and oxidation resistance. Compatible with most plastics and elastomers.

**Composition** – Polyalphaolefin (PAO); Lithium soap; Oxidation inhibitor; Solid lubricants.

**Temperature range** – From -50°C to +140°C.

## Molykote® AI-6159

**Description** – Grease designed for plastic mechanisms.

**Applications** – Suitable for the lubrication of plastic adjustment mechanisms, gears, and window regulator guides.

**Features** – Effective noise reduction. Low starting torque at cold temperatures. Compatible with plastics. Silicone-free. Wide operating temperature range.

**Composition** – Polyalphaolefin (PAO); Lithium thickener; PTFE.

**Temperature range** – From -40°C to +150°C.

## Molykote® G-1502 FM

**Description** – Synthetic food-grade grease for bearings and gears, ideal for applications requiring a sticky grease to address water washout or where grease dispersion cannot be tolerated.

**Applications** – Suitable for: Chains, cams, and open gears. Valves and sprockets. Food machinery. Gearboxes and pumps. Sliding bearings, bushings, and sleeves. Plastic lubrication. Power screw drives. Rolling bearings. Guides and sliding rails. Valves, seals, gaskets, and O-rings.

**Features** – Highly effective noise reduction properties. Compatible with plastics. Good compatibility with plastics and rubber.

**Composition** – Polyalphaolefin (PAO); Solid lubricants.

**Temperature range** – From -50°C to +150°C.

## Molykote® G-1057

**Description** – Low-bleed PAO-based grease designed for lubrication and noise reduction.

**Applications** – Suitable for: Industrial and appliance assembly components (MOLYAPP-12). Automotive body and interior components. Sliding bearings, bushings, and sleeves. Plastic lubrication. Power screw drives. Rubber and elastomer lubrication. Guides and sliding rails.

**Features** – Low bleed. Noise damping. Good compatibility with plastics and rubber. High-speed performance. Low noise operation. Effective performance at low temperatures.

**Composition** – Polyalphaolefin (PAO).

**Temperature range** – From -50°C to +150°C.

## Molykote® G-1067

**Description** – Low-bleed PAO-based grease with solid lubricants, designed for plastic components and automotive body applications.

**Applications** – Automotive rail components

Lubrication of glass fiber-reinforced plastic (GFRP) parts. Closure actuation systems. Control cables. Plastic lubrication. Rubber and elastomer lubrication. Guides and sliding rails

**Features** – Wide temperature range (-50°C to 120°C). Compatible with most plastics. Effective lubricant for GFRP. Good compatibility with plastics and rubber

**Composition** – Polyalphaolefin (PAO).

**Temperature range** – From -50°C to +120°C.

## Molykote® G-1074

**Description** – PAO-based grease designed for lubricating common metallic, plastic, and elastomeric substrates. Provides excellent noise damping properties, even under extreme pressure and high-frequency conditions.

**Applications** – Automotive systems, including chassis, brakes, exterior, and interior components. Ideal for bearings, gears, slides, and mechanical applications requiring low friction and compatibility with metals, plastics, and elastomers

**Features** – PAO-based lubricant for multiple substrates. Excellent noise damping properties, even under extreme high-frequency pressure. Wide operating temperature range

**Composition** – Polyalphaolefin (PAO).

**Temperature range** – From -50°C to +150°C.

## Molykote® PG-65

**Description** – Synthetic oil-based grease formulated with special solid lubricants. Offers excellent compatibility with various plastics such as PET, HDPE, PTFE, nylon, and PBT, as well as rubbers like NBR, PIB, polyurethane, and neoprene. Features a low friction coefficient and good lubricity at high operating speeds.

**Applications** – Specifically designed for: Plastic/plastic, plastic/metal, plastic/rubber, and metal/rubber pairings. Electromechanical components such as bushings, sliding bearings, gears, linear systems, switches, levers, and hinges. Particularly suited for lubricating Bowden cables, electric motors and gears, car sunroofs, and automotive heating and ventilation systems

**Features** – Compatible with most plastics. Low friction coefficient. Optimized for high-speed applications.

**Composition** – Polyalphaolefin (PAO); Lithium soap.

**Temperature range** – From -55°C to +130°C.

## Molykote® YM-102

**Description** – Synthetic grease based on lithium soap, designed for high-performance applications.

**Applications** – High-performance grease for plastic/plastic and plastic/metal pairings operating at low to moderate speeds and under high loads, such as heavily stressed plastic gears in automotive and audio-video units.

**Features** – Wide operating temperature range. Good compatibility with plastics. High load-carrying capacity. Low friction coefficient. Free of molybdenum disulfide

**Composition** – Polyalphaolefin (PAO); Lithium soap; Solid lubricants.

**Temperature range** – From -50°C to +150°C.

## Molykote® YM-103

**Description** – High-performance grease for metal/metal, metal/plastic, and plastic/plastic combinations, suitable for applications ranging from slow to fast movements and medium to high loads.

**Applications** – Ideal for friction points with medium to high loads and low to high speeds, especially in applications requiring reliable operation at low temperatures.

Successfully used in automotive mirror adjustment gears, steering systems, and VCR mechanisms.

**Features** – Free of lead and nickel. Suitable for long-term lubrication due to low oxidation tendency. High load-carrying capacity. Good water washout resistance. Low starting torque. Compatible with most plastics and elastomers.

**Composition** – Polyalphaolefin (PAO); Lithium soap; Solid lubricants.

**Temperature range** – From -45°C to +120°C (up to +150°C for short periods).

## Synthetic Greases (POE-Based)

### Molykote® 7514

**Description** – Synthetic oil-based grease specifically designed for electric motors.

**Applications** – Successfully used in needle bearings of gear reducers and planetary gears.

**Features** – Wide operating temperature range. Suitable for long-term lubrication. Excellent performance at low temperatures. Provides good corrosion protection.

**Composition** – Polyalphaolefin/ester base oil; Lithium complex thickener; EP additives; Corrosion inhibitor.

**Temperature range** – From -40°C to +180°C.

### Molykote® BG-20

**Description** – High-performance grease for metal/metal combinations with movements ranging from slow to very fast and loads from moderate to heavy.

**Applications** – Suitable for lubrication points exposed to medium to high loads and high to very high speeds, especially at elevated temperatures.

Proven performance in clutch release bearings, fan bearings, roller bearings of calendars, and electric motor bearings.

**Features** – Free of lead and nickel. High load-carrying capacity. Designed for long-term lubrication due to low oxidation tendency. Wide operating temperature range. Ideal for very high rotational speeds (DN factor of 750,000).

**Composition** – Ester base oil; Lithium complex thickener; EP/AW additives; Oxidation inhibitor.

**Temperature range** – From -45°C to +180°C (up to +200°C for short periods).

### Molykote® BG-555

**Description** – Long-life, low-noise grease designed for extended performance.

**Applications** – Suitable for bearings operating over long periods at high temperatures.

**Features** – Wide operating temperature range. Excellent low-temperature properties. Rust prevention properties. Noise reduction capabilities.

**Composition** – Ester base oil; Lithium soap.

**Temperature range** – From -40°C to +150°C.

## Synthetic Greases (Fluorosilicone-Based)

### Molykote® 3451

**Description** – High-performance fluorosilicone grease, resistant to chemicals and high temperatures.

**Applications** – Lubricant for metal/metal combinations with slow to medium-speed movements and medium to heavy loads, across a wide temperature range. Ideal for harsh environments involving exposure to chemicals, acids, and alkalis.

**Features** – High oxidation resistance. High dropping point. Wide operating temperature range. Excellent resistance to water and water washout. Resistant to most solvents and chemicals.

**Composition** – Fluorosilicone oil; PTFE thickener.

**Temperature range** – From -40°C to +230°C.

### Molykote® 3452

**Description** – Lubricating and sealing grease for metal/metal, metal/plastic, and metal/elastomer combinations subjected to slow movements and heavy loads across a wide temperature range, especially under adverse environmental conditions.

**Applications** – Suitable for contact points and operating conditions of the mentioned elements. Successfully used in: Valves, pumps, and mechanical seals. Spherical joints. Bearings. Ship load levers. Vacuum equipment.

**Features** – Low evaporation. High oxidation resistance. Wide operating temperature range. Excellent resistance to water and water washout. Resistant to most solvents and chemicals. Compatible with most plastics and elastomers.

**Composition** – Fluorosilicone oil; PTFE thickener.

**Temperature range** – From -30°C to +230°C.

## Synthetic Greases (PFPE-Based)

### Molykote® HP-300

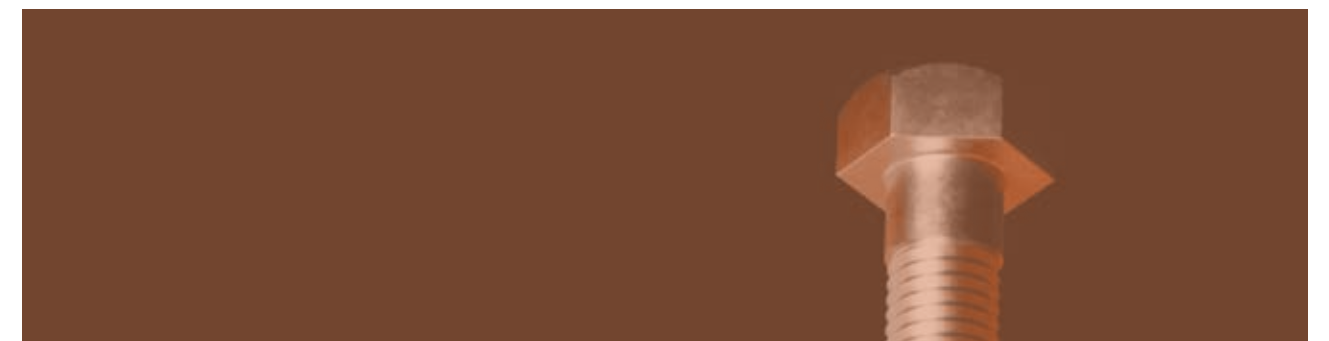
**Description** – Fluorinated grease delivering excellent performance under extreme conditions.

**Applications** – Suitable for a wide range of operating temperatures and high-vacuum applications, such as semiconductor processing.

**Features** – Low vapor pressure (base oil). Excellent resistance to chemicals and solvents. Outstanding stability at high temperatures. Good compatibility with elastomers and plastics. Usable at low temperatures.

**Composition** – Perfluoropolyether (PFPE); PTFE thickener.

**Temperature range** – From -35°C to +250°C (for short periods, from -65°C to +280°C).





## Molykote® HP-870

**Description** – Lubricating grease for metal/metal and metal/plastic combinations with slow to medium-speed movements under extremely heavy loads.

**Applications** – Successfully used in: Sliding and rolling bearings of refrigeration systems. Bearings in pumps and fans. Loading equipment in the chemical and petrochemical industries

**Features** – Suitable for long-term lubrication. High load-carrying capacity. Usable in centralized lubrication systems. Highly water-resistant. Resistant to many chemicals. Compatible with most plastics and elastomers

**Composition** – Perfluoropolyether (PFPE); PTFE thickener; High-temperature corrosion inhibitor.

**Temperature range** – From -20°C to +250°C (up to +280°C for short periods).

## Synthetic Greases (Silicone)

### Molykote® 33 Light

**Description** – Lubricating grease for metal/metal and metal/plastic combinations subjected to slow to medium-speed movements and light loads, particularly across a wide range of operating temperatures.

**Applications** – Successfully used in: Rollers of mobile refrigeration equipment and refrigeration systems. Control cables. Electric clocks. Motors and automotive components, including windshield wipers and starters. Photographic and optical devices. Surveying instruments

**Features** – High oxidation resistance. Wide operating temperature range. Excellent low-temperature performance. Compatible with most plastics. Water-resistant

**Composition** – Silicone oil; Lithium soap.

**Temperature range** – From -73°C to +180°C.

### Molykote® 33Medium

**Description** – Lubricating grease designed for metal/metal and metal/plastic combinations under slow to medium-speed movements and light loads, particularly across a wide range of operating temperatures.

**Applications** – Successfully applied in: Rollers of mobile refrigeration equipment and refrigeration systems. Control cables. Electric clocks. Motors and automotive components, including windshield wipers and starters. Photographic and optical equipment. Surveying instruments

**Features** – High oxidation resistance; Wide operating temperature range; Excellent low-temperature performance; Compatible with most plastics; Water-resistant.

**Composition** – Silicone oil; Lithium soap.

**Temperature range** – From -73°C to +180°C.

### Molykote® 41

**Description** – Silicone grease designed for very high-temperature applications and low-speed operations.

**Applications** – Ideal for: Rolling bearings in conveyor belts for ovens. Pumps for molten salts. Carts for baking ovens. Steam turbine governors

**Features** – Non-melting. High-temperature stability. Excellent oxidation resistance. Good water resistance and water washout resistance

**Composition** – Silicone oil; Carbon black; Corrosion inhibitor.

**Temperature range** – From -20°C to +290°C.

## Molykote® 44 Light

**Description** – High-temperature grease for bearings, designed for demanding applications under elevated thermal conditions.

**Applications** – Suitable for: Rolling bearings in oven fans, dryers, and conveyors. Clutch release bearings. Plastic components

**Features** – Low evaporation rate. High oxidation resistance. Good water washout resistance. Compatible with most plastics. Wide operating temperature range

**Composition** – Silicone oil; Lithium soap.

**Temperature range** – From -40°C to +200°C.

### Molykote® 44Medium

**Description** – High-temperature bearing grease designed for applications requiring thermal stability and reliable performance.

**Applications** – Ideal for: Rolling bearings in oven fans, dryers, and conveyors. Clutch release bearings. Plastic components.

**Features** – Low evaporation. High oxidation resistance. Excellent water washout resistance. Compatible with most plastics. Wide temperature operating range

**Composition** – Silicone oil; Lithium soap.

**Temperature range** – From -40°C to +200°C.

### Molykote® PG-21

**Description** – High-performance grease for plastic/plastic and plastic/metal combinations, suitable for slow to medium-speed movements and light to medium loads.

**Applications** – Ideal for contact points with low to medium loads and speeds, capable of functioning across a wide temperature range. Commonly used in: Control cables. Water pumps. Bearing bushings. Gears. Sliding guides. Plastic components in appliances, toys, and electrical devices

**Features** – High oxidation resistance. Wide operating temperature range. Good water resistance. Excellent corrosion protection. Compatible with most plastics and elastomers

**Composition** – Silicone oil; Lithium complex soap.

**Temperature range** – From -50°C to +190°C.

### Molykote® PG-54

**Description** – High-performance grease for plastic/plastic and plastic/metal combinations, designed for slow to medium-speed movements and light to medium loads.

**Applications** – Suitable for lubrication points with medium/low loads and speeds. Commonly used in: Silent locking bushings. Audio and video cassette mechanisms. Hydraulic pump seals. Compass guide screws for brakes. Control cables. Sliding surfaces in washing machines and dishwashers.

**Features** – High oxidation resistance. Wide operating temperature range. Excellent low-temperature performance. Low friction coefficient. Good corrosion protection. Excellent compatibility with most plastics and elastomers.

**Composition** – Silicone oil; Lithium complex soap; Solid lubricants; EP additives.

**Temperature range** – From -50°C to +180°C.

## Molykote® G-807

**Description** – Silicone compound with a low friction coefficient, containing special solid lubricants. Offers excellent compatibility with plastics and rubbers and features a low friction coefficient.

**Applications** – Primarily designed for mechanical pairings of plastic/metal and metal/rubber.

**Features** – Wide operating temperature range. Compatible with most plastics and rubbers. Good corrosion resistance. Low friction coefficient

**Composition** – Silicone oil; PTFE.

**Temperature range** – From -40°C to +150°C.

## Molykote® 55 O-Ring

**Description** – Silicone-based lubricant specifically designed for O-rings.

**Applications** – Dynamic lubrication between metal and rubber parts in pneumatic systems used in industrial, aerospace, automotive, and general applications.

**Features** – High oxidation resistance. Wide operating temperature range. Good corrosion protection. Compatible with most plastics and elastomers

**Composition** – Silicone oil; Ester; Lithium soap.

**Temperature range** – From -65°C to +175°C.

## Molykote® 7348

**Description** – Silicone-based lubricant specifically designed for O-rings.

**Applications** – Dynamic lubrication between metal and rubber parts in pneumatic systems used in industrial, aerospace, automotive, and general applications.

**Features** – High oxidation resistance. Wide operating temperature range. Good corrosion protection. Compatible with most plastics and elastomers

**Composition** – Silicone oil; Ester; Lithium soap.

**Temperature range** – From -65°C to +175°C.

## Molykote® G-5511

**Description** – High-performance grease for plastic/plastic and plastic/metal combinations, designed for slow to medium-speed movements and light to medium loads.

**Applications** – MOLYKOTE® G-5511 is specifically designed for use in water faucets, between ceramic discs, rubber seals, and plastic components. It is also suitable for applications involving gas contact.

**Features** – High wear resistance. Excellent load-bearing capacity. Superior low-temperature performance. Wide operating temperature range. Good compatibility with rubbers and plastics NSF H1 approved for food industry applications

**Composition** – Silicone oil; PTFE.

**Temperature range** – From -40°C to +200°C.

## Molykote® G-5032

**Description** – Silicone grease for the food industry, designed for versatile applications requiring NSF H1 certification for incidental food contact.

**Applications** – Multi-purpose silicone grease suitable for food and beverage industry applications. Ideal for lubricating components subjected to low to medium loads and speeds.

**Features** – Wide operating temperature range. Compatible with most plastics and elastomers. Excellent water resistance. Low volatility. Complies with FDA regulation 21 CFR 178.3570. NSF H1 certified for incidental food contact.

**Composition** – Silicone oil; PTFE.

**Temperature range** – From -40°C to +200°C.

## Molykote® HighVacuumGrease

**Description** – Lubricant and sealant for valves, designed to provide reliable performance in demanding environments.

**Applications** – Lubrication of shut-off and pressure control valves, faucets, thermostats, and showers. Sealant for vacuum or pressurized systems. Sealant for outdoor equipment (including marine applications) exposed to washout or aggressive environments, such as meters and electrical connections. Barrier coating against chemical aggressors. Lubricant for seals, gaskets, and O-rings made of rubber and plastic.

**Features** – Excellent resistance to most chemicals. Wide operating temperature range.

Low vapor pressure. Low volatility. Superior water resistance.

**Composition** – Silicone oil; Inorganic thickener; Additives.

**Temperature range** – From -40°C to +200°C

## Molykote® 7508

**Description** – Semi-fluid silicone-based lubricating grease designed for ceramic discs in faucets, fittings, and valves.

**Applications** – Lubrication of ceramic discs in faucets and fittings, particularly single-lever mixers. Suitable for application on rubber seals and plastic components

**Features** – Excellent resistance to most chemicals. Wide operating temperature range. Low vapor pressure. Low volatility. Superior water resistance.

**Composition** – Dimethyl silicone.

**Temperature range** – From -40°C to +200°C.

## Silicone Compounds

Silicone compounds are grease-like lubricants containing silicone fluids thickened with inert amorphous silica. They are resistant to oxidation and thermal degradation, maintaining their properties over a wide temperature range. Designed as release agents, they can be used as assembly lubricants for O-rings, electrical current insulators, non-hardening sealants, and for lubricating rubber and plastic components. Silicone compounds are suitable for applications where they perform the dual function of sealing and lubricating



## Molykote® 4

**Description** – Grease-like compound thickened with inert silica combined with selected polydimethylsilicone fluids.

**Applications** – Moisture sealant for ignition systems in aircraft, automobiles, and boats, as well as for spark plug caps and electrical connectors of all types. Used as a lubricant and sealant for electrical connections, battery terminals, door seals, switches, and O-rings made of plastic and rubber. Assembly and operational lubricant for various metal-plastic and metal-rubber combinations.

**Features** – High dielectric strength. Moisture-resistant. Excellent thermal and chemical stability. Meets MIL-S-8660C specifications. Maintains grease consistency from -55°C to +200°C. Odorless. Highly water-repellent.

**Composition** – Silicone oil; Inorganic thickener.

**Temperature range** – From -55°C to +200°C.

## Molykote® 7

**Description** – Polydimethylsiloxane polymer.

**Applications** – Rubber Industry: Lubricant and protective agent for loaded connections that require quick and easy assembly; for challenging release operations, such as on automotive battery exteriors. Plastic Industry: Release agent for epoxy resins, polystyrene, PVC, polyester, and other plastics. Foundries: For assembling new or refurbished molds and cores. Other Industries: Release agent for nonwoven textiles (TNT), rocket propellants, screws, and other extruder parts; release agent for forming integrated gaskets on ceramic tiles.

**Features** – Heat stable. Resists molding temperatures up to +200°C. Minimizes residues on molds due to heat stability and oxidation resistance. Effective even in small amounts. Inert to metals, most plastics, and organic materials. Insoluble in water, methanol, ethanol, glycerin, and mineral oil.

**Composition** – Silicone oil; Inorganic thickener.

**Temperature range** – From -40°C to +200°C.

## Molykote® 111 Compound

**Description** – Lubricant and sealant for valves, providing excellent performance in harsh environments.

**Applications** – Lubrication of shut-off and pressure control valves, faucets, thermostats, and showers. Sealant for vacuum or pressurized systems. Sealant for outdoor equipment (including marine applications) exposed to washout or aggressive conditions, such as meters and electrical connections. Barrier coating against chemical aggressors. Lubrication for seals, gaskets, and O-rings made of rubber and plastic.

**Features** – Excellent resistance to most chemicals. Wide operating temperature range. Low vapor pressure. Low volatility. Superior water resistance.

**Composition** – Silicone oil; Inorganic thickener; Additives.

**Temperature range** – From -40°C to +200°C.

## Molykote® G-5111

**Description** – Compound based on silicone oil thickened with PTFE.

**Applications** – Lubrication of elastomers and plastics, O-rings, seals, and bellows. Can also be used as a damping medium for specific applications.

**Features** – High oxidation resistance.

**Composition** – Silicone oil; Inorganic thickener.

**Temperature range** – From -40°C to +150°C.

## Molykote® 3099 HVIC

**Description** – Grease-like silicone coating specifically formulated to provide long-term resistance to water rewetting and flashover for electrical insulators.

**Applications** – Protective coating for electrical insulators. The compound's consistency allows easy application to the desired thickness. The matte gray appearance of Molykote® 3099 HVIC Compound ensures a uniform and complete coating. For more detailed application instructions, refer to the technical data sheet.

**Features** – Easy to apply. Provides high flashover resistance. Contains an arc-resistant filler that inhibits arc growth, helping to protect insulators from glaze damage when the coating's hydrophobic properties diminish. Non-stringy, spreads easily, and adheres well to properly prepared insulators.

**Composition** – Grease-like silicone compound.

## AFC Coatings (Anti-Friction Coatings)

Molykote® AFC coatings are similar to paints. Instead of colored pigments, they contain micronized particles of solid lubricants dispersed in carefully selected resin and solvent mixtures. Critical for lubrication properties and corrosion protection are the choice of raw materials and the volume concentration of solid lubricants they contain.

In addition to greases and oils, or where feasible as a replacement for hydrodynamic lubricants, Molykote® AFC coatings form a lubricating film that helps cover surface roughness and protects against friction between surfaces (e.g., metal-to-metal, plastic-to-plastic), even under extreme load conditions.





## Anti-Friction Coatings (AFC)

### Molykote® D-321R

**Description** – Air-curing dry lubricant.

**Applications** – Suitable for metal-to-metal pairings with slow to medium/fast movements and high loads. Ideal for lifetime lubrication of heavily loaded guides with low-speed oscillating motion and intermittent operations. Used to improve run-in and operational lubrication in high vacuum or extreme temperatures. Successfully applied for: Cylinder head bolts. Toaster guides. Automotive mirror adjustment systems. High-voltage switches. Run-in of heavily loaded gears. Emergency lubrication for rotor parts in wind energy systems. Scratch-free cold extrusion of steel.

**Features** – Air-dries. Prevents stick-slip. High resistance to aging.

**Composition** – Solid lubricants; Inorganic binder; Solvents.

**Temperature range** – From -180°C to +450°C.

### Molykote® 106

**Description** – Thermosetting dry lubricant.

**Applications** – Provides a soft coating for metal-to-metal pairings. Maintenance-free, lifetime lubrication for highly loaded friction points with low speeds or oscillating movements. Suitable where design constraints prevent the use of oils or greases or to eliminate contamination risks. Successfully used for dry lubrication of locks, hinges, joints, solenoids, and as an anti-seize coating for engine and gear components.

**Features** – Low friction coefficient. High load-carrying capacity. Good adhesion. Can be painted over.

**Composition** – Solid lubricants; Organic binder; Solvents.

**Temperature range** – From -70°C to +250°C.

### Molykote® 3400A Lead-free

**Description** – Thermosetting dry lubricant for metal/metal combinations.

**Applications** – Successfully used in automotive applications, including: Hinges and body linkages. Moving parts in locks, switches, ventilation controls, and servomechanisms. Under-hood connections exposed to dust, moisture, fuels, oils, and other contaminants.

**Features** – Excellent lubrication. Outstanding corrosion protection. Good solvent resistance. High load-carrying capacity. Excellent adhesion to metal. Low friction coefficient. High resistance to oils and fuels.

**Composition** – Molybdenum disulfide (MoS<sub>2</sub>); Organic binder; Solvent

**Temperature range** – From -200°C to +315°C.

### Molykote® D-6600

**Description** – Thermosetting dry lubricant film.

**Applications** – Suitable for permanent lubrication of metal/metal and metal/plastic combinations with slow to medium-speed movements and medium to low pressure conditions. Used where oils or greases are technically unsuitable or undesirable due to the risk of contamination.

**Features** – Excellent dry lubrication properties. Low friction coefficient, especially under medium and low pressures. Outstanding load-carrying capacity at medium and low pressures. Excellent wear protection. Strong adhesion to metals. Low friction for metal/plastic pairings. Good corrosion protection. High wear resistance. Effective at low speeds. Wide temperature range.

**Composition** – Solid lubricants; Inorganic binder; Solvents.

**Temperature range** – From -180°C to +450°C.

### Molykote® 3402C Lead-free

**Description** – Air-drying dry lubricant.

**Applications** – Provides an excellent combination of corrosion protection and lubrication. Commonly used on couplings and splined shafts of drills and power tools.

**Features** – Good corrosion protection. Excellent lubrication. Air-drying. High load-carrying capacity and wear resistance.

**Composition** – Solid lubricants; Corrosion inhibitor; Organic binder; Solvents.

**Temperature range** – From -200°C to +310°C.

### Molykote® 7400

**Description** – Air-drying dry lubricant.

**Applications** – Suitable for metal-to-metal sliding contacts with low to moderately high speeds and high loads. Improves the run-in of gears, plain bearings, and guides. Used for the run-in of automotive drive shafts. Maintenance-free clean lifetime lubrication for seat adjustment bushings. Ideal for cold forming of steel.

**Features** – Free from flammable solvents. Water-based. Environmentally friendly. High load resistance. Low friction coefficient.

**Composition** – Solid lubricants; Inhibitors; Organic binder; Water; Stabilizers

**Temperature range** – From -70°C to +200°C.

### Molykote® D-7409

**Description** – Thermosetting dry lubricant.

**Applications** – Suitable for metal-to-metal pairings with low to moderately high speeds and medium to high loads. Designed for oscillating movements or intermittent operation. Enhances run-in, provides lifetime lubrication at high temperatures, and is used where oils and greases are unsuitable. Successfully applied to pistons, rings, and tappets in engines; starter solenoids; vehicle components such as brakes, locks, hinges, and pumps. Protects hydraulic and pneumatic parts from corrosion.

**Features** – Exceptional lubrication with excellent corrosion protection. Resistant to oils, greases, solvents, and many chemicals. Prevents contact corrosion.

**Composition** – Solid lubricants; Organic binder; Solvents.

**Temperature range** – From -70°C to +380°C

### Molykote® D-10

**Description** – Thermosetting dry lubricant.

**Applications** – Suitable for metal-to-metal pairings with low to moderately high speeds and medium to high loads. Designed for long-lasting lubrication, even in direct contact with oils and greases. Ideal for lifetime lubrication of pistons in diesel and gasoline engines, compressors, piston pumps, hydraulic and pneumatic systems, and other applications where reducing wear between piston and cylinder is critical during run-in, cold starts, and normal operation.

**Features** – Excellent resistance to oils, greases, and solvents. High wear resistance. Supplied as a viscous liquid ready for screen-frame application.

**Composition** – Solid lubricants; Organic binder; Solvents.

**Temperature range** – From -70°C to +380°C.

## Molykote® D-3484

**Description** – Thermosetting dry lubricant.

**Applications** – Suitable for metal-to-metal pairings with low to moderately high speeds and medium to high loads. Successfully used in carburetor springs, injection system components, splined shafts, and gears. Also applied to seat belt components, hood latches, screws, pins, and levers in tractors and earth-moving machinery.

**Features** – Excellent lubrication properties. Quick curing, making it highly suitable for mass production. High load and abrasion resistance for long service life.

**Composition** – Solid lubricants; Organic binder; Solvents.

**Temperature range** – From -70°C to +250°C.

## Molykote® D-708

**Description** – Thermosetting dry lubricant.

**Applications** – Suitable for plastic-metal and metal-metal pairings under low to medium loads. Used for components such as locks, doors, seat belts, springs, hinges, pins, and washers. Ideal for office machines and fine mechanics. Recommended for dry lubrication of threaded connections.

**Features** – Exceptional corrosion protection. Good aesthetic appearance. Consistent and well-defined friction coefficient for threaded connections.

**Composition** – Solid lubricants; Organic binder; Solvents.

**Temperature range** – From -180°C to +240°C.

## Molykote® D-96

**Description** – Air-drying dry lubricant.

**Applications** – Reduces or eliminates noise from plastic parts, commonly used in automotive applications such as door panels, armrests, dashboards, glove compartments, and even leather components.

**Features** – Excellent anti-noise performance. Low friction. Consistent friction coefficient across varying temperatures. Water-based. Transparent coating.

**Composition** – Solid lubricants; Organic binder; Water; Stabilizers.

**Temperature range** – From -40°C to +80°C.

## Molykote® PTFE-N UV

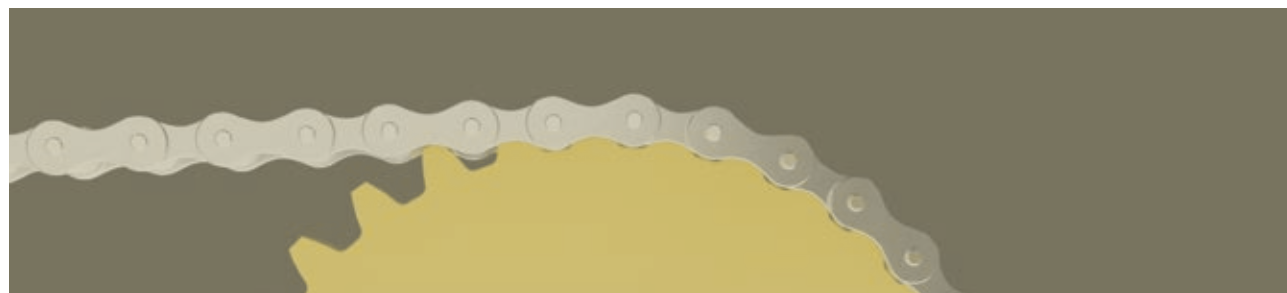
**Description** – Air-drying dry lubricant.

**Applications** – Suitable for rubber guides, sliding doors, furniture hinges, small office machine mechanisms, and seals of automotive sunroofs. Can be used on virtually all material pairings, such as metal/metal, plastic/metal, and plastic/plastic, with medium-slow movements and low loads. The UV trace allows users to easily confirm the product's presence on the surface with a simple UV lamp.

**Features** – Very low friction coefficient. Colorless, so it does not stain. Easily visible under UV light.

**Composition** – PTFE; Binder; Solvents; UV trace.

**Temperature range** – From -180°C to +240°C.



## Molykote® D-709

**Description** – Air-drying dry lubricant.

**Applications** – Designed for plastic/metal and metal/metal combinations under medium-low loads. Commonly used on automotive components such as brakes, doors, locking mechanisms, seat belts, springs, pins, and washers. Ideal for parts requiring lubrication with a metallic appearance.

**Features** – Silver appearance. Excellent corrosion protection. Low friction coefficient. Effective corrosion resistance.

**Composition** – PTFE; Binder; Solvents.

**Temperature range** – From -60°C to +240°C.

## Other Coatings

## Molykote® L-0500

**Description** – Dry coating for corrosion protection.

**Applications** – Protects "bare" metal surfaces and drilling or welding points. Repairs damaged galvanized surfaces. Serves as a protective primer against corrosion for all types of paint.

**Features** – Good corrosion protection. Effective water resistance. Strong adhesion.

**Composition** – Aluminum and zinc flakes; Binders; Solvents.

**Temperature range** – From -30°C to +240°C.

## Molykote® Metalform

**Description** – Transparent wax solution for metal part forming.

**Applications** – Suitable for cold forming of steel, aluminum and its alloys, copper, and brass. Can be used as a clean, non-staining dry lubricant in the paper industry or other applications requiring a clean lubricant. Successfully used for deep drawing, stamping, bending, cold extrusion, and cold forging of aluminum, as well as for calibrating metal parts. Also applicable for self-tapping screws, blades, guides, furniture hinges, and joints.

**Features** – Extends tool life. Effective even in very small quantities (very thin film). Particularly effective on alloy steels and aluminum. Pre-treatment of components can be safely performed without contamination risks during transport.

**Composition** – Synthetic wax; Corrosion inhibitor; Solvents.

**Temperature range** – From -60°C to +120°C.

## Molykote® Metal Protector Plus

**Description** – Protective coating against corrosion.

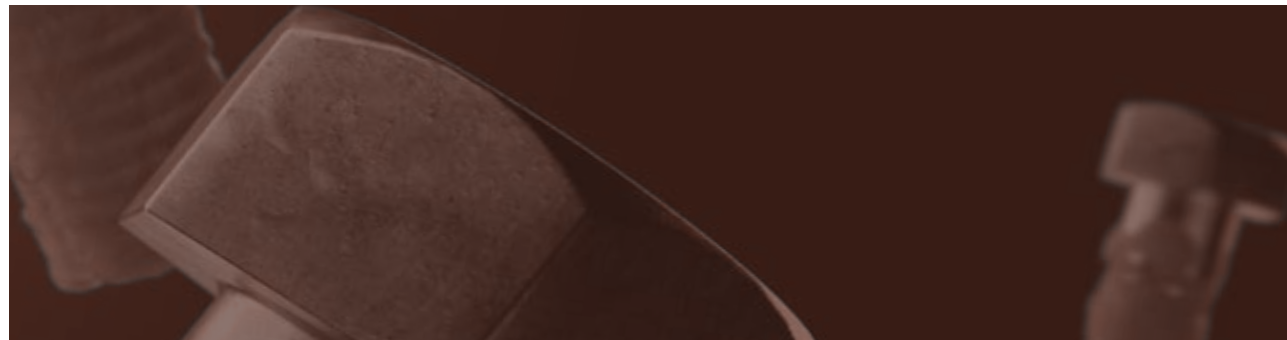
**Applications** – Provides protection for metal parts that need to be stored or transported.

**Features** – Long-lasting protection. Transparent film. Low friction coefficient.

**Composition** – Synthetic wax; Corrosion inhibitor; Solvents.

## Solvents

Molykote® solvents are formulated to degrease and remove residues such as oils and greases, as well as to adjust the viscosity of Anti-Friction Coatings (AFC). They are also ideal for cleaning the equipment used in the application of these coatings.



### Molykote® 7415

**Description** – Solvent-based thinner.

**Applications** – Solvent for thinning and cleaning, specifically designed for solvent-based AFC coatings, particularly: D-7409 and D-10.

**Features** – Transparent

**Composition** – Organic solvent

### Molykote® Metal Cleaner

**Description** – Solvent blend.

**Applications** – Cleaner and degreaser for brakes, clutches, engine components, electrical contacts, and metal surfaces.

**Features** – Quickly dissolves dirt Non-corrosive. Fast evaporation with no residue

**Composition** – Blend of organic solvents.

### Molykote® S-1002

**Description** – Spray cleaner for electrical contacts; fast-evaporating, residue-free cleaner to reduce electrical resistance; safe for plastics, rubber, and coatings.

**Applications** – Removes oils, grease, and dust from electrical and electronic equipment.

**Features** – Reduces electrical resistance. Fast evaporation with no residue. Compatible with many plastics and rubbers.

### Molykote® L-13

**Description** – Solvent-based thinner.

**Applications** – Solvent for thinning and cleaning, specifically designed for solvent-based AFC coatings, particularly: D-321R, D-3484, 3400A LF, 3402C Lead-free, 106, PTFE-N UV, and D-708.

**Features** – Transparent

**Composition** – Blend of organic solvents.

## Dispersions

Molykote® Dispersions are finely dispersed solid lubricants or other lubricants suspended in lubricating fluids. They are used when it is necessary to apply solid lubricants in liquid form to operating units or hard-to-reach areas. Some dispersions also serve as anti-wear and extreme pressure additives for gear and engine oils.



### Molykote® HTF

**Description** – White dispersion of solid lubricants in mineral oil.

**Applications** – High-temperature separation and lubrication. Successfully used for hot rolling of tools and forging of conical taps made of Ms 58.

**Features** – High load-bearing properties. Forms a lubricating separation layer between tool and machine. Wide temperature range. Mineral oil volatilizes at high temperatures without leaving residues. Extends tool life.

**Composition** – Mineral oil; Solid lubricants; Stabilizer; Thickener.

**Temperature range** – From -20°C to +1150°C.



## Molykote® M-30

**Description** – Black dispersion of solid lubricants in synthetic oil.

**Applications** – Successfully used in chains and rollers of high-temperature conveyors.

**Features** – Increases load-carrying capacity. Reduces friction and wear. Enhances run-in performance. Provides emergency lubrication. Does not form carbonaceous residues.

**Composition** – Synthetic oil; Molybdenum disulfide (MoS<sub>2</sub>); Dispersant

**Temperature range** – As a fluid lubricant: up to +200°C. As a dry lubricant: up to +450°C.

## Molykote® M-55 Dispersion

**Description** – Black dispersion of solid lubricants in mineral oil.

**Applications** – Successfully used as an additive for mineral oils.

**Features** – Increases load-carrying capacity. Reduces friction and wear. Lowers noise levels. Enhances run-in performance. Provides emergency operating properties. Prevents and reduces pitting in gears.

**Composition** – Mineral oil; Molybdenum disulfide (MoS<sub>2</sub>); Dispersant.

**Temperature range** – Varies depending on the oil to which Molykote® M55 Plus is added.

## Molykote® MKL-N

**Description** – Grease with mineral oil and solid lubricants dispersed in a solvent.

**Applications** – Used for chain lubrication.

**Features** – Penetration. Adhesion. Wear protection. Corrosion protection. Aging stability

**Composition** – Mineral oil; Inhibitors; Adhesion promoter; Solid lubricants; Solvents

**Temperature range** – From -25°C to +160°C.

## Molykote® Multigliss

**Description** – Dispersion with penetrating properties.

**Applications** – Facilitates disassembly of parts stuck due to corrosion and rust.

**Features** – Penetration. Rust-dissolving properties. Lubrication

**Composition** – Mineral oil; Solid lubricants; Stabilizers; Solvent; Corrosion inhibitor

**Temperature range** – From -50°C to +50°C.

## Molykote® Omnigliss

**Description** – Fast-acting penetrating agent with anti-corrosion, water-repellent, and lubricating properties.

**Applications** – Suitable for frictional contacts at medium/low speeds without grease fittings or lubrication holes. Used on joints, levers, chains, and other components in transportation or conveyor equipment, textile machinery, automatic filling units, and all types of packaging equipment.

**Features** – Good penetration. Water-repellent

High pressure resistance. Temporary corrosion protection

**Composition** – Mineral oil; Solid lubricants; Corrosion inhibitor; Stabilizer

**Temperature range** – From -30°C to +80°C.

## Molykote® W15

**Description** – Dispersion with penetrating properties.

**Applications** – Designed to ease disassembly of parts stuck due to corrosion and rust.

**Features** – Penetration capabilities. Rust-dissolving properties. Lubrication benefits.

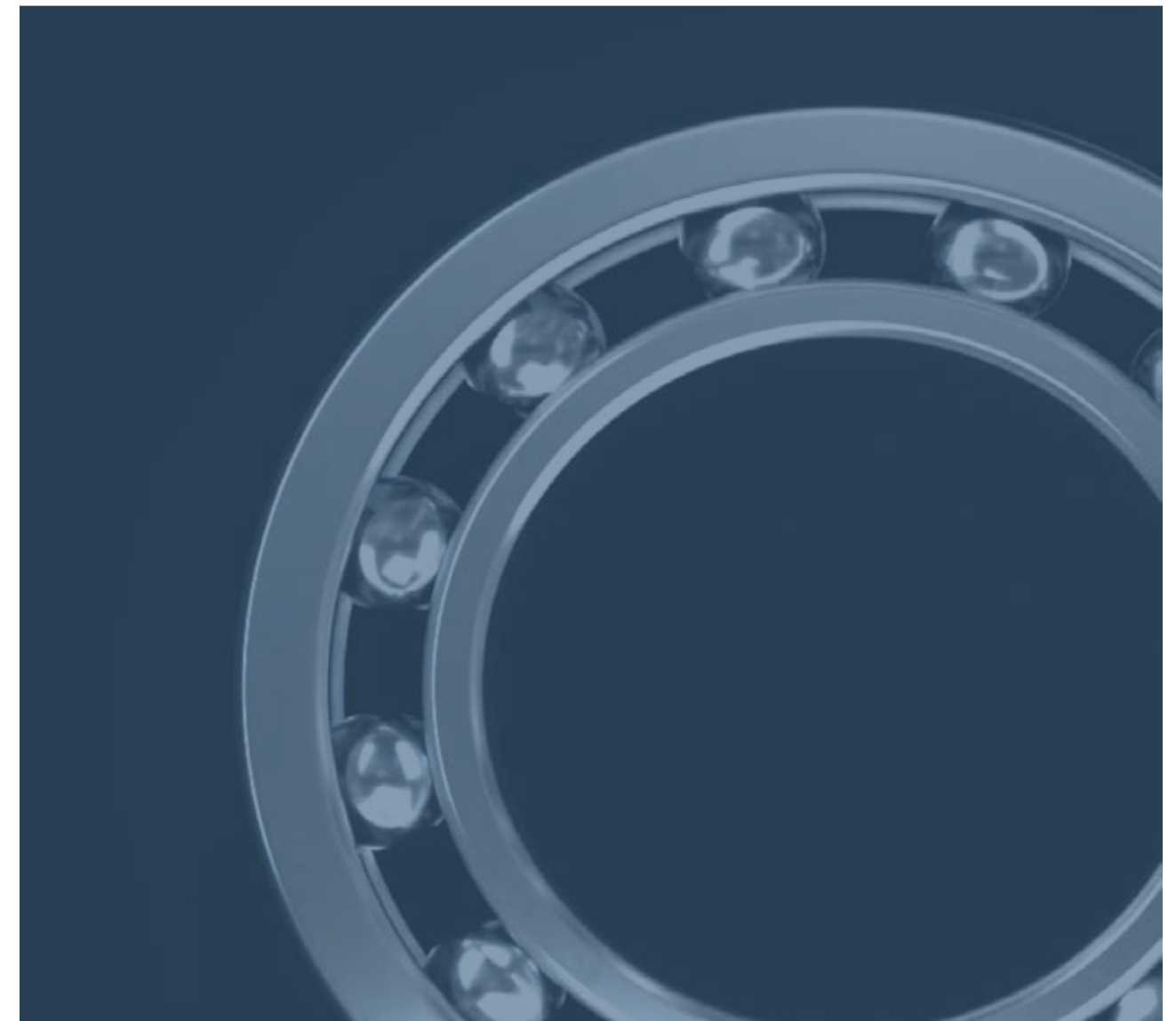
**Composition** – Mineral oil; Solid lubricants; Stabilizers; Solvent; Corrosion inhibitor.

**Temperature range** – From -50°C to +50°C.

## Other Products

The Molykote® family of lubricants is complemented by a range of sprays and fluids for special applications.

These products are designed to cover a wide temperature range, provide corrosion protection, and offer good adhesion strength and load resistance.



## Molykote® Separator Spray

**Description** – Silicone-based release agent and lubricant.

**Applications** – Used as a release agent in rubber and plastic processing, carton manufacturing, and woodworking. Ideal for facilitating movement on conveyor belts, guides, and sliding surfaces in the food industry. Complies with FDA regulation 21 CFR 178.3570 and is NSF H1 registered for incidental food contact.

**Features** – Excellent release properties. Reduces friction and wear. Enhances surface quality and simplifies cleaning. Lubricates plastic and rubber parts. Wide operating temperature range. Flammable.

**Composition** – Silicone oil; Polydimethylsiloxane.

**Temperature range** – From -40°C to +200°C.

## Molykote® Supergliss

**Description** – Protective lubricant against corrosion.

**Applications** – Facilitates disassembly of rusted parts. Used as a corrosion protective agent.

**Features** – Excellent penetration. Rust-dissolving properties. Provides lubrication. Corrosion protection.

**Composition** – Mineral oil; Adhesion promoter; Solvent; Corrosion inhibitor; Propellant.

**Temperature range** – From -50°C to +50°C.

## FM Spray® Oil

**Description** – Multi-purpose mineral oil spray designed for use in the food and beverage industry.

**Applications** – Lubrication of mechanical components in food and beverage processing industries.

**Features** – Easy to use. Provides good protection. High corrosion resistance. High load-carrying capacity. Complies with FDA regulation 21 CFR 178.3570 and is NSF H1 registered for incidental food contact. Odorless and colorless.

**Composition** – Mineral oil; Corrosion inhibitor; EP/AW additives; Propellant.

**Temperature range** – From -10°C to +120°C.

## Molykote® L-1428

**Description** – Chain lubricants.

**Applications** — High-temperature chain oil, a POE/PB blend containing a package of anti-rust, oxidation, anti-wear, and anti-corrosion additives.

Molykote® L-1428 chain lubricant helps protect against dirt, frequent moisture, and detergent exposure. The relatively low viscosity of the oil enhances chain penetration.

**Features** – Excellent penetration. Rust-dissolving properties. Effective lubrication. Corrosion protection. Wide temperature range. Longer oil drain intervals. Reduced lubricant consumption. Extended equipment lifespan. Reduced energy consumption. Long-lasting performance reduces lubricant use and maintenance costs.

**Temperature range** – From -10°C to +280°C

**Color** – Yellow

## Molykote® CO-220

**Description** – Chain oil.

**Applications** – Suitable for chain lubrication.

**Features** – Low evaporation. Solvent-free. Wide operating temperature range.

**Temperature range** – From -10°C to +250°C.

**Color** – Transparent brownish.

## Molykote® L-1122 FM

**Description** – Synthetic oil for gears.

**Applications** – Food machinery. Gears, gearboxes, and pumps.

**Features** – Reduces overall maintenance costs. Wider temperature range. Longer oil drain intervals. Reduced lubricant consumption. Extended equipment lifespan. Reduced energy consumption. Long-lasting performance reduces lubricant use and maintenance costs. Good corrosion protection. Good oxidation resistance. High-temperature performance. High wear resistance.

**Composition** – Polyalphaolefin (PAO) base oil. Viscosity @ 40°C – 217. ISO Viscosity Grade – 220. Viscosity index – 127.

**Color** – Amber.

## Molykote® L-1115 FM

**Description** – Synthetic oil for gears.

**Applications** – Food machinery. Gears, gearboxes, and pumps.

**Features** – Reduces overall maintenance costs. Wider temperature range. Longer oil drain intervals. Reduced lubricant consumption. Extended equipment lifespan. Reduced energy consumption. Long-lasting performance reduces lubricant use and maintenance costs. Good corrosion protection. Good oxidation resistance. High-temperature performance. High wear resistance.

**Composition** – Polyalphaolefin (PAO). Base oil Viscosity @ 40°C – 149. ISO Viscosity Grade – 150. Viscosity index – 129.

**Color** – Amber.

## Powder

## Molykote® Z

**Description** – Provides excellent lubrication for metal surfaces in all types of environments, including more complex ones, such as metal/metal parts subjected to high loads and low speeds, or metal/plastic parts subjected to low loads and medium to low speeds.

**Applications** – Used for coating metal contact points that cannot be sufficiently lubricated with oils or greases due to very high loads, low speeds, or environmental influences.

**Features** – Extreme pressure resistance. Excellent adhesion to metal surfaces. Resistant to oxidation. Wide operating temperature range.

**Composition** – Molybdenum disulfide (MoS<sub>2</sub>).

**Temperature range** – From -185°C to +450°C.

Molykote® Microsize

**Description** – Provides excellent lubrication for metal surfaces in all types of environments, including complex ones, such as metal/metal parts subjected to high loads and low speeds, or metal/plastic parts subjected to low loads and medium to low speeds.

**Applications** – Used for coating metal contact points that cannot be sufficiently lubricated with oils or greases due to very high loads, low speeds, or environmental influences. Preferred for achieving a particularly smooth surface finish and for highly alloyed steels with a compact structure. Can be added as an additive to reduce friction in elastomers, plastics, and sintered metals.

**Features** –Extreme pressure resistance. Excellent adhesion to metal surfaces. Resistant to oxidation. Wide operating temperature range.

**Composition** – Molybdenum disulfide (MoS<sub>2</sub>).

**Temperature range** – From -185°C to +450°C.

Molykote® Lubolid 7365

**Description** – Friction control additive.

**Applications** – Suitable for the following applications: Disc brake pads for passenger cars and commercial vehicles. Drum brake seals. Railway disc brake pads. Railway wheel brake linings. General industrial brake seals. Clutch seals

**Features** – Reduces fading. Improves friction recovery. Stabilizes friction. Reduces vibrations. Enhances comfort. Reduces pad wear. Reduces rotor wear. Prevents DTV (disc thickness variation). Lead-free and antimony-free ("as per the End of Life Vehicle (ELV) directive")

**Color** –Gray.

Food Grade Products and Sprays

Food Grade Products – NSF H1

Mounting Pastes

Molykote® P-1900

Greases

Molykote® G-0050 FM  
Molykote® G-0051 FM  
Molykote® G-0052 FM  
Molykote® G-4500  
Molykote® G-4501  
Molykote® HP-300  
Molykote® G-1502 FM  
Molykote® G-5032

Other Sprays

Molykote® Food Grade Spray Oil  
Molykote® Separator Spray

1. Lubricants for incidental food contact must comply with 21 CFR 178.3570; they can be used in environments where food is processed, where there is a possibility of incidental contact with the food itself.

Spray

Pastes

Molykote® 1000 Spray  
Molykote® HSC Plus Spray  
Molykote® D Spray  
Molykote® G-Rapid Plus Spray  
Molykote® Cu-7439 Plus Spray

Greases

Molykote® 1122 Spray  
Molykote® G-4500 Spray

Anti-Friction Coatings

Molykote® PTFE-N UV Spray  
Molykote® D-321R Spray

Other Coatings

Molykote® Metal Protector Plus Spray  
Molykote® L-0500 Spray

Solvents

Molykote® S-1002 Spray  
Molykote® Metal Cleaner Spray

Dispersions

Molykote® MKL-N Spray  
Molykote® Multigliss Spray  
Molykote® Omnigliss Spray

Other Products

Molykote® FM Spray Oil  
Molykote® Supergliss Spray  
Molykote® Separator Spray



Physical Properties

Pastes

						4 Ball Test			Screwing test on threaded connection		
Screw Paste	Color	Unworked Penetration [mm/10]	Density at 20°C [g/ml]	Viscosity at 40°C Base Oil [mm2/s]	Temperature Range [ °C]	Welding Load [N]	Wear Scar at 800N [mm]	Press Fit Test	Thread μ	Head μ	Water Resistance at 90°C
Molykote® 1000	Brown	280-310	1.25		-30 to + 650	4800	1.00		0.13	0.08	0
Molykote® HSCPlus	Copper	250-280	1.40		-30 to 1100	4800	1.10		0.14	0.09	0
Molykote® P-37	Grey / Black	280-310	1.20		-40 to +1400	4800	1.70		0.15	0.09	0
Molykote® P-74	Grey / Black	280-310	1.20	65	-40 to + 200 up to +1500 (dry lubricant)	4800	1.10		0.13	0.08	0
Assembly Paste											
Molykote® D	White	250-280	1.20		-25 to + 250	2600	1.10	0.10	0.13	0,08	1
Molykote® G-n Plus	Black	280-310	1.35		-25 to + 450	2800	0.75	0.08	0.12	0,06	2
Molykote® G-Rapid Plus	Black	255-275	1.40		-35 to + 450	5300	0.50	0.05	0.10	0,06	1
Molykote® M-77	Black	280-330	1.95		-45 to + 230 up to +450 (dry lubricant)	2000					0
Molykote® U-n	Black	250-280	1.70		-40 to + 450	3800	0.80	0.09	0.14	0,12	0
Grease Paste											
Molykote® Cu-7439 Plus	Copper	320-370	1.00	1100	-30 to + 300 up to +650 (dry lubricant)	2500	1.00	0.07	0.17	0,10	1
Molykote® DX	White	285-315	1.10	110	-25 to + 125	4800	0.75	0.10			2
Molykote® E	Yellow	265-295	1.20	18	-50 to + 160	4800	0.80	0.06			0
Molykote® P-40	Brown	310-350	1.05	360	-40 to + 230 up to + 1200 (dry lubricant)	3000	0.94	0.12	0.16	0,08	1
Molykote® P-1500	White	290-320	1.05	90	-50 to +160	4000	0.82	0.12			0
Molykote® P-1900	White	290-340	1.10	85	-30 to + 300	3200	0.90	0.10	0.10	0,10	1
Molykote® TP-42	Beige	265-300	1.20	185	-25 to + 250	3000	0.90	0.09			2
Molykote® X	Black	255-275	1.05	115	-30 to + 135	3000	0.78	0.07			1
Other Paste											
Molykote® HTP	bianco	250-280	1.50	25	-20 to +1150	2200	1.00				0

# Physical Properties

## Grease

Mineral Oil Grease	Color	Class NLGI	Worked Penetration [mm/10]	Oil base viscosity 40°C [mm2/s]	Working temperature [°C]	Dropping Point [°C]	4-Ball Weld Load Test [N]	FAG Bearing Test FE9, F50(>100h)	SKF-Emcor Corrosion Protection
Molykote® 1102	Black	approx. 3	205-240	900	0 to +160	N/A	2100		5
Molykote® 1122	Black	approx. 2	250-2801	1500	+10 to +160	N/A	2600		5
Molykote® 165 LT	Black	2-3	240-2701	320	-25 to +120	+175	4400		0
Molykote® BR2 Plus	Black	2	265-295	114	-30 to +130	+175	3600	+130 °C	0
Molykote® G-0050 FM	White	0	355-385	70	-20 to +150	+216	> 3150		0
Molykote® G-0051 FM	White	1	310-340	70	-20 to +150	+232	> 3150		0
Molykote® G-0052 FM	White	2	265-295	115	-20 to +150	+246	> 3150		0
Molykote® G-0102	Brown	2	275-295	150	-25 to +140	> +300	3200	+140 °C	0-1
Molykote® G-67	Beige	1	310-340	115	-20 to +120	+155	4800		0-1
Molykote® Longterm 00	Black	00	400-430	300	-40 to +110	+190	3400		1
Molykote® Longterm 2/78G	Black	2	265-295	112	-35 to +130	+180	3200		0
Molykote® Longterm 2Plus	Black	2	265-295	265	-25 to +110	+175	3800	+110 °C	0-1
Molykote® Longterm W2	White	2	265-295	125	-30 to +110	+180	2400		0-1
Molykote® Multilub	Beige	2	265-295	114	-25 to +120	+210	2200		1

Synthetic Grease									
Molykote® G-68	Beige	2-3	250-280	75	-30 to +140	+190	1900		0
Molykote® PG-75	Beige	2	265-295	32	-40 to +130	+190	1300		1-2

Synthetic Grease, PAO									
Molykote® EM-50L	White	1	310-340	1050	-40 to +150	+195	1400		1
Molykote® EM-60L	White	1	310-340	18	-60 to +130	+195	3100		3-4
Molykote® G-2003	Beige	2	265-295		-50 to +140	+190	2200		0
Molykote® G-4500	White	2	265-295	108	-40 to +150	+270	3200		1
Molykote® G-4501	White	1	310-340	110	-40 to +150	+260	3600		0
Molykote® G-4700	Black	2	265-295	150	-40 to +177	+280	4000		0
Molykote® EM-30L	White	1	310-340	90	-45 to +150	+195	3800		2-3
Molykote® PG-65	Beige	1-2	275-305	18	-55 to +130	+200	2000		0-1
Molykote® YM-102	Yellow	1-2	285-315	29	-50 to +150	+195	4200		0
Molykote® YM-103	Yellow	1-2	285-315	29	-45 to +120	+195	5200		2

Synthetic Grease, POE									
Molykote® 7514	Brown	1-2	290-320	49	-40 to +180	> +200	1500		0
Molykote® BG-20	Beige	2-3	240-2701	55	-45 to +180	> +295	2400	+180 °C	1-2
Molykote® BG-555	Beige	3	255	26	-40 to +150	+195			0

1 the unworked penetration is measured

Physical Properties

Grease

Synthetic Grease, Fluorosilicone	Color	Class NLGI	Worked Penetration [mm/10]	Oil base viscosity 40°C [mm2/s]	Working temperature [°C]	Dropping Point [°C]	4-Ball Weld Load Test [N]	FAG Bearing Test FE9, F50	SKF-Encor Corrosion Protection
Molykote® 3451	White	2	265-295	495	-40 to +230	> +260	3200		
Molykote® 3452	White	2-3	240-280	5310	-30 to +230	> +220	4400		

Synthetic Grease, PFPE									
Molykote® HP-300	White	2	265-295	160	-35 to +250	N/A	3300		0
Molykote® HP-870	White	2	265-295	345	-20 to +250	N/A	4600		0-1

Synthetic Grease, Silicone									
Molykote® 33 Light	Pink	1	300-340	77	73 to +180	> +200			
Molykote® 33 Medium	Pink	approx. 2	260-300	77	-73 to +180	> +200			
Molykote® 41	Black	approx. 2	260-300	160	-20 to +290	N/A			
Molykote® 44 Light	Brown	1-2	290-330	84	-40 to +200	> +200			
Molykote® 44 Medium	Brown	2-3	240-280	84	-40 to +200	> +200			
Molykote® 55O-Ring	Pink	approx. 2	260-300	60	-65 to +175	> +190			
Molykote® 7348	Beige	2	265-295	240	-20 to +230	> +290			
Molykote® 822M	White	approx. 2	250-290	240	-40 to +200	> +200			
Molykote® G-5032	White	2	265-295	500(at 25°C)	-40 to +200	N/A	1180		
Molykote® G-72	Grey	0-1	320-370	260	-40 to +200	> +250			0-1
Molykote® G-807	White	approx. 1	300-3301	22500	-40 to +150				
Molykote® High Vacuum Grease	Translucent	approx. 2	260		-45 to +200	+300			
Molykote® PG-21	White	2	265-295	150	-50 to +190	> +250			0-1
Molykote® PG-54	White	2-3	245-275	150	-50 to +180	> +250			0-1

Compounds

								Dielectric Constant at		Dissipation Factor at				
	Color	Non Worked Penetration [mm/10]	Worked Penetration 60 Strokes [mm/10]	Working temperature [°C]	Dropping Point [°C]	Oil Separation 24h at200°C, Max. [%]	Oil Evaporation 24h at 200 °C, Max. [%]	100 Hz	100kHz	100 Hz	100kHz	Dielectric Strength 50 mm Gap [V/ mm]	Resistivity at 23 °C [Ohm x cm]	Arc Resistance [s]
Molykote® 111 Compound	Translucent	185	260	-40 a +200	nessuno	0,5	2,0	2,88	2,95	0,0001	< 0,0005	> 450	2,17 x 1015	124
Molykote® 4	Translucent	220	310	-55 a +200	nessuno	6,0	2,0	2,98	3,01	0,0001	< 0,0002	> 450	1,1 x1015	130
Molykote® 7	Translucent	250	270	-40a+200	nessuno	6,5	0,8	2,85	2,83	< 0,0001	< 0,0001	> 450	2,8x1015	126

1 the unworked penetration is measured



Physical Properties

AFC Coatings (Anti-Friction Coatings)

AF Coatings	Solid Lubricant	Solvent	Binder	Color	Working Temperature [°C]	Drying Time at 20°C [min]	Curing Time [min/°C]	Falex Load-Carrying Capacity [N]	Debyer Test for Contact Corrosion [oscillations]	Salt Spray Test [h]	Screw Tightening Test on Threaded Connections μ Thread μ Head	Solvent	Flash Point [°C]
Molykote® 106	MoS2	Organic	Organic	Dark Grey	-70 to +250		60/+150 30/+180	p = 13600	24x106			Molykote® L13	+24
Molykote® D-321R	MoS2	Organic	Inorganic	Grey - Black	-180 to +450	5	5/+20	p = 12500	14x106			Molykote® L13	+23
Molykote® 3400A Lead-free	MoS2	Organic	Organic	Dark Grey	-200 to +430		30/+200	p = 16000	7x106	p +sp =500 p +dp =240		Molykote® L13	+10
Molykote® 3402C Lead-free	MoS2	Organic	Organic	Grey	-200 to +310	15	120/+20	s = 10700 p = 15500	5x106	p=120		Molykote® L13	+6
Molykote® 7400	MoS2	Water	Organic	Dark Grey	70 to +200	15	5/+90 40/+20	p = 11300	9x106			Water	Nobody
Molykote® D-7409	MoS2	Organic	Organic	Grey - Black	-70 to +380		30/+220 120/+150	s = 14700	36x106	p +sp=300 p+dp=96		Molykote® 7415	+28
Molykote® D-10	Graphite	Organic	Organic	Black	70 to +380		30/+180 20/+210	s = 2800				Molykote® 7415	+65
Molykote® D-3484	MoS2	Organic	Organic	Grey - Black	-70 to +250		10/+170 5/+200	15500	28x10	p=24		Molykote® L13	+23
Molykote® D-708	PTFE	Organic	Organic	Black	-180 to +240		20/+200 60/+180	s=2250	1x106	p+sp=500 p +dp =360	s = 0.12   s = 0.12	Molykote® L13	0
Molykote® D-709	PTFE	Organic	Organic	Silver	-60 to +240		60/+180 20/+200						
Molykote® D-96 UV	PTFE	Water	Organic	Transparent	-40 to +80	10	120/+20				s = 0.09   s = 0.09	Water	> +100
Molykote® PTFE-N UV	PTFE	Organic	Organic	Transparent	-180 to +240	5/10	120/+20	4000		p+sp=24		Molykote® L13	-12

Other Coatings	Active Agent	Solvent	Color	Working Temperature [°C]	Drying Time at 20°C [min]	4-Ball Weld Load Test [N]	Wear Scar Load 800N [mm]	Press Fit Test	Salt Spray Test [h]	Flash Point [ °C]
Molykote® L-0500	Zinc and Aluminum	Organic	Silver	-30 to +240	30				2403	+25
Molykote® Metalform	Wax	Organic	Transparent	-60 to +120	90	1200	0.85			+28
Molykote® Metal Protector Plus	Wax Synthetic	Organic	Transparent		90			0.12	510	+24

¹ Surface pre-treatment: p =phosphated, s =sandblasted, b =no pretreatment  
² Application method: sp =spray, dp =immersion and centrifuge  
³ Minimum film thickness 40 µm

Physical Properties

Solvents

Product	Solvent	Color	Flash Point [°C]
Molykote® 7415	Organic	Transparent	+91
Molykote® L-13	Organic	Transparent	+27
Molykote® Metal Cleaner	Organic	Transparent	Not Specified
Molykote® S-1002	Organic	Yellow Transparent	Not Specified

Dispersions

	Base Oil	Color	Viscosity at 40°C [mm²/s]	Dropping Point [°C]	Flash Point [°C]	Density at 15°C [g/ml]	Temperature Range [°C]
Molykote® HTF	MO	Black	29	Not Specified	> +218	0,86	-20 to +1150
Molykote® M-30	POE/PAG	Black	120	Not Specified	>+200	1,00	Up to +200, dry lubrication up to +450
Molykote® M-55 Dispersion	MO	Black	73,2	Not Specified	+210	0,91	Depends on the oil it is added to
Molykote® MKL-N	MO	Black	4000	Not Specified	Not Specified	0,87	-25 to +160
Molykote® Multigliss	MO	Transparent	12,5	-57	Not Specified	0,85	-50 to +50
Molykote® Omnigliss	MO	Amber	11,8	-53	Not Specified	0,84	-30 to +80
Molykote® W15	MO	Black	50	Not Specified	>+200	0,94	Depends on the oil it is added to

Other Products

Product	Base Oil	Color	Temperature Range [°C]	Viscosity at 40°C [mm²/s]	Density at 15°C [g/ml]	Dropping Point [°C]
Molykote® FM Spray Oil	MO	Transparent	-10 to +120	96	Not Specified	< -10
Molykote® Separator Spray	Si	Transparent	-40 to +200	Not Specified	0,97	-43
Molykote® Supergliss	MO	Transparent	-50 to +50	3,59	0,83	-56

Powders

Product	Particle Size (Fischer) [µm]	Color	Temperature Range [°C]	Press Fit Test	Density at 20°C [g/ml]	Press Fit Test Load [N]
Molykote® Microsize	0.65 to 0.75	nero	185 to +450	0,06	4,80	>20000
Molykote® Z	MO	nero	185 to +450	0,05	4,80	>20000

Troubleshooting Guide



Rolling Bearings

Problem	Requirements	Molykote®Solution
Short life due to high loads	Multi-purpose grease with MoS2	BR2 Plus
	Extreme pressure and water resistance	Longterm 2 Plus
	Wide temperature range MoS2	G-4700
Short life due to water and/or humidity	Medium loads and speeds	G-0102
Resistance to extremely low temperatures (-73 °C)	Low and medium loads and speeds	33 Light, 33 Medium
Short life due to very high temperatures (up to +180 °C continuous)	Medium-high loads and high speeds	BG-20
Short life due to very high temperatures (up to +200 °C continuous)	Medium-low loads and speeds	44 Light, 44 Medium
Short life due to very high temperatures (up to +250 °C continuous)	Resistant to solvents and aggressive chemicals	HP-870
Short life due to very high temperatures (up to +250 °C continuous)	Food industry	HP-300
Short life due to very high temperatures (up to +230 °C continuous)	Heavy loads and chemical resistance	3451
Short life due to very high temperatures (up to +230 °C continuous)	Medium-low loads and speeds	7348
Vacuum environments	Temperature range between -35 and +250 °C	HP-300
Chemical resistance	Temperature range between -35 and +250 °C	HP-870, HP-300
	Temperature range between -40 and +230 °C	3451
Low noise	Temperature range between -40 and +150 °C	BG-555
Lubrication of needle bearings	Temperature range between -40 and +180 °C	7514
Food industry	Normal temperature and loads	G-005x FM
Food industry	Resistance to loads and speed	G-4501, G-4500



Shafts/connections

Problem	Requirements	Molykote®Solution
Stick-slip damage during assembly and running-in	Dry lubricant	D-321R
	Pre-treatment with solid lubricants	G Rapid Plus
	Pre-treatment with adhesive mounting paste	G-n Plus
High wear, contact corrosion, increased tolerances	Multi-purpose grease with MoS2	BR2 Plus
	Extreme pressure grease with MoS2	Longterm 2 Plus
	Contact corrosion resistance	P-40
	Alimentary	P-1900
Short life and short lubrication intervals in a wet environment	Long-lasting white grease resistant to water	Longterm W2
	Extreme pressure grease resistant to water	Longterm 2 Plus



## Open gears

Problem	Requirements	Molykote®Solution
Wear, pitting, or corrosion on the teeth of gears at low or medium speeds (2 m/s)	Pre-treatment with adhesive mounting paste	G-n Plus
	Pre-treatment with solid lubricants	G Rapid Plus
	Protection against contact corrosion	TP-42
	Adhesive grease against contact corrosion	G-67
	Protection against wear for high loads	165 LT
	Synthetic grease with solid lubricants	1122
	Protection against contact corrosion, food grade	P-1900



## Closed plastic gears

Problem	Requirements	Molykote®Solution
Running-in, stick-slip, scoring	White synthetic grease with solid lubricants	EM-30L
High wear and short life due to a wide range of temperatures and high loads. Swelling, shrinkage, embrittlement, etc., due to unsuitable lubricant	White silicone grease for a wide temperature range of use	PG-21
	Synthetic grease with solid lubricants for high loads	G-2003
	White synthetic grease with solid lubricants	EM-30L
	White silicone grease with solid lubricants	PG-54
	Semi-synthetic grease for enclosed plastic and steel gears	G-68
	Multi-purpose semi-synthetic grease	PG-75
	Synthetic grease with solid lubricants for extreme pressures	YM-103



## Linear motion systems

Problem	Requirements	Molykote®Solution
High quantity of lubricant oil	Dry coating AFC followed by a thin layer of DX paste	3402C Lead-free +DX
High wear for intermittent operations or small movements	Dry lubricant lacquer for small movements	3402C Lead-free
	High loads	3402C Lead-free +DX
Surface finish imperfections due to high loads and wear	High loads and medium speeds	3402C Lead-free + Longterm 2 Plus
High temperature	High temperatures, low to medium loads, and high speeds	BG-20



## Closed metal gears

Problem	Requirements	Molykote®Solution
Wear during running-in	Pre-treatment with solid lubricants	G Rapid Plus
	Dry lubricant	D-321R
Wear, pitting	MoS2 additive for gear oils	55 Plus
	MoS2 additive for gear oils	Longterm 00
	Synthetic grease with solid lubricants	1122
	Food-grade synthetic grease	G1502 FM



## Metal sliding bearings

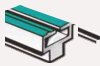
Problem	Requirements	Molykote®Solution
Stick-slip damage during assembly	Dry lubricant lacquer	D-321R
	Pre-treatment with adhesive mounting paste	G-n Plus
	Pre-treatment with solid lubricants	G Rapid
	Food-grade lubrication	Plus P-1900
Scoring, wear, short life due to high loads	Multi-purpose grease with MoS2	BR2 Plus
	Extreme pressure grease with MoS2	Longterm 2 Plus
	Food-grade grease	G-4500
Short life and short lubrication intervals in a wet environment	Long-lasting white grease resistant to water	Longterm W2
	Extreme pressure grease resistant to water	Longterm 2 Plus



## Plastic sliding bearings

Problem	Requirements	Molykote®Solution
Running-in, stick-slip, scoring	White synthetic grease with solid lubricants	EM-30L
	Synthetic paste for extreme pressures	E
High wear, embrittlement, swelling, shrinkage, hardening due to unsuitable lubricant, short life due to high temperatures or high loads	White silicone grease with a wide temperature range of use	PG-21
	White synthetic grease with solid lubricants for extreme pressures	G-2003
	White synthetic grease with solid lubricants for extreme pressures	EM-30L
	White silicone grease with solid lubricants	PG-54
	Multi-purpose semi-synthetic grease	PG-75
	Synthetic grease with solid lubricants for extreme pressures	YM-103





## Linear Guide

Problem	Requirements	Molykote®Solution
Stick-slip damage during assembly	Pre-treatment with adhesive mounting paste	G-n Plus
	Pre-treatment with solid lubricants	G-Rapid Plus
	Multi-purpose grease with MoS2	BR2 Plus
	MoS2 grease for extreme pressures	Longterm 2Plus
Scoring, wear, and short life due to high loads	Food-grade grease (NSF-H1) Multi-purpose for high loads	G-4500
	Synthetic grease for high loads on metals	G-4700
	Multi-purpose semi-synthetic grease	PG-75
	White synthetic grease with solid lubricants for extreme pressures	EM-30L
	Silicone grease for plastics with a wide temperature range of use	33 Light, 33 Medium
Short life and short lubrication intervals in a wet environment	Long-lasting white grease resistant to water	Longterm W2
	MoS2 grease resistant to water	Longterm 2 Plus
Contact corrosion	White paste with solid lubricants for high loads	DX
	Adhesive grease against contact corrosion	G-67
	Food-grade	P-1900



## Chains

Problem	Requirements	Molykote®Solution
High wear and short operational life due to high temperatures and high loads	Semi-synthetic chain oil	S-1500
	Synthetic oil for high temperatures	S-1501
	Temperature range from -30 to +250 °C	S-1502
	Synthetic oil for high temperatures and low friction (up to +250 °C)	S-1503
	Synthetic adhesive oil for high temperatures and low friction (up to +250 °C)	S-1504
	High-temperature oil without solvents	CO 220
High wear and short operational life due to insufficient lubrication at high speeds	Adhesive lubricant with MoS2	MKL-N
High wear and short operational life due to high temperatures and high loads	Dry lubrication with solid lubricants up to +450 °C	M-30
High wear and corrosion due to high loads and wet environments	Black lubricant for grease lubrication points	1122
	Adhesive paste for normal and stainless steel chains	P-40
	Grease for chains in the food industry	G-4500
High wear and corrosion due to emulsion and water washout	High resistance to water emulsion, high resistance of lubricant film	L-0460 FM
High wear and short operational life due to low operating temperatures	Food-grade, use down to temperatures below -50 °C	L-1468 FM



## Recirculating screws

Problem	Requirements	Molykote®Solution
Contamination due to oil ingress	Lubricant during dosing	D-7409
High wear due to oxidation of the lubricant or decomposition at high temperatures in an aggressive environment	Silicone grease for low and high temperatures	33 Light, 33 Medium
	Silicone grease for high temperatures	44 Light, 44 Medium
	Chemically resistant fluorosilicone grease	3451
Silicone grease for high temperatures	Multi-purpose grease	Multilub
	Synthetic grease for high speeds	BG-20



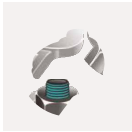
## Screws and threaded connections

Problem	Requirements	Molykote®Solution
Contact corrosion and wear on stainless steel screws	White mounting paste	D
	Black mounting paste free of metals	P-74
	Dry lubricant lacquer	D-321 R
	Food-grade mounting paste	P-1900
Contact corrosion and wear on nuts with galvanized surfaces	Very low tightening torque	G-Rapid Plus
	Dry lubricant lacquer	D-321R
Broken nuts and stripped threads due to excessive torque from high friction	Constant tightening torque	1000
Contact corrosion and wear on nuts exposed to medium-low temperatures and corrosive environment	Metal-free lubricating paste	P-40
Broken nuts due to thread stress	On high temperature screws (nickel alloys)	P-37
Broken nuts and wear due to high temperatures and corrosive environments	Anti-seize paste for high temperatures	HSC Plus



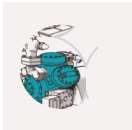
## Press fits

Problem	Requirements	Molykote®Solution
Long and laborious assembly due to stick-slip; scoring formation, wear on the component due to press fit	Pre-treatment with adhesive mounting paste	G-n Plus
	White mounting paste	D
	Pre-treatment with solid lubricants	G-Rapid Plus
	Food-grade mounting paste	P-1900



## Maintenance

Problem	Requirements	Molykote®Solution
Difficulty in disassembly due to corrosion and rust	5-in-1 lubricant	Multigliss
	Penetrating oil	Supergliss
Contaminated components	Metal and brake cleaner	Metal Cleaner
Stick-slip and damage during assembly and running-in	Pre-treatment with adhesive mounting paste	G-n Plus
	Pre-treatment with solid lubricants	G-Rapid Plus
Corroded components due to corrosive environment	Copper adhesive paste	Cu-7439 Plus
Worn or broken threaded connections	White mounting paste	D
	Pre-treatment with solid lubricants	G-Rapid Plus
	Constant tightening torque	1000
	High-temperature screws (nickel alloys)	P-37
Pitting wear and noise	Food-grade (stainless steel alloys)	P-1900
	MoS2 additive for gear oils and motors	A
Corrosion	Transparent and dry protective coating	Metal Protector Plus
Difficult applications without lubrication points	Low viscosity dispersion of solid lubricants	Omnigliss
Dust contamination in electrical systems	Electrical contact cleaner	S-1002
Rubber, metal, and plastic parts bonding	Silicone lubricant and release agent	Separator Spray
	Dry lubricant lacquer PTFE-N UV	PTFE-N UV
Repair of damaged surfaces	Dry protective coating	N UV L-0500



## Vacuum Pumps, Air Compressors

Problem	Requirements	Molykote®Solution
Short lubricant life, low pump performance	Good oxidation and thermal stability	L-0610
Short lubricant life due to high exposure to water in the food industry	Food-grade, high water resistance	L-1668 FM
Short life due to deposit formation	Good oxidation and thermal stability	L-1246
Short life due to high temperatures	Synthetic oil (PAO)	L-1246
Food-grade application	Food-grade	L-1246 FM



## Hydraulic system

Short life due to water emulsification	High resistance to water emulsification	L-1346 FM
Short lubricant life due to high exposure to water in the food industry	Food-grade	L-1346 FM
Must operate at low temperatures	Very low pour point (-42°C)	L-1368 FM

## Test Method

## Mechanical tests

Test name	Machine and test description	Result	International Standard	Products that can be tested
FAG – FE 9	Test to determine the life of a lubricant in rolling bearings under a specific temperature, rotational speed, and axial load.	Bearing life in hours	DIN 51821	Greases, Pastes
High Temperature Screw Tester	High-temperature test for screws using the Belzer torque wrench to evaluate the breakaway torque of M12 screws.	Breakaway torque in Nm	Not applicable	Pastes
LFW 1 Oscillation	Test to investigate the tribological properties of a steel block in contact with a lubricated oscillating ring.	Static and dynamic friction coefficient (μ), wear in mm, lubricant life	ASTM D2714, ASTM D2981, ASTM D3704	Greases, Pastes, AFC, Oils
LFW 1 Rotation	Test to investigate the tribological properties of a steel block in contact with a lubricated rotating ring.	Static and dynamic friction coefficient (μ), wear in mm, lubricant life	ASTM D2714, ASTM D2981, ASTM D3705	Greases, Pastes, AFC, Oils
Low Noise Tester	Test to determine the noise of a bearing lubricated with grease through vibration.	Noise level	Not applicable	Greases
Pin & Vee Block Tester	Test to determine the tribological properties of a lubricated steel shaft rotating between two V-shaped steel blocks under a specific load.	Friction coefficient (μ), wear in mm, duration in hours, load capacity in N	ASTM D2670, ASTM D2625, ASTM D3233, ASTM D3704	AFC, Oils
Screw Tester	Test to determine the tribological properties of lubricated threaded connections (nuts, bolts).	Friction coefficient (μ) on head and thread	DIN 946	Pastes, AFC, Oils
SKF Emcor Tester	Test to determine the corrosion resistance properties of a lubricant.	Corrosion grade	DIN 51802	Pastes, Greases
SRV Tester	Multi-purpose test to measure friction and wear under oscillatory or rotational motion.	Friction coefficient (μ), wear in mm	DIN 51834, ASTM D5706-7, DIN 50324	Greases, Pastes, AFC, Oils
VKA – Four Ball Machine	Multi-purpose test to measure friction and wear under oscillatory or rotational motion.	Weld load in N, wear scar in mm	DIN 51350	Greases, Pastes, Oils

Physical tests

Test name	Machine and test description	Result	International Standard	Products that can be tested
Density Meter (Pycnometers)	Test to determine the density and specific gravity of semi-solid materials using a pycnometer.	g/ml	DIN 51 757, ASTM D70, ISO 3838	Greases, Pastes, Compounds, Oils
Dropping Point Apparatus	Measures the dropping point of a lubricant.	Dropping point - in °C or °F	ASTM D566, IP 132, ISO2176, FTM791-1421	Greases, Pastes, Compounds
Flow Pressure Apparatus (Kesternich Method)	Determines the flow pressure of greases through a specific nozzle at a given temperature.	Pressure in mbar	DIN 51 805	Greases
Infrared-Analysis Spectrometer (IR)	Measures the infrared spectrum of a given lubricant for qualitative analysis.	IR Spectrum	DIN 51 820 T1	Greases, Pastes, Compounds, Oils
Oil Bleed & Evaporation Test Assembly	Measures the tendency of a grease to separate its oil content and evaporate at a specific temperature.	Separation and evaporation in %	FTM 791-321-2, ASTM D6184	Greases, Pastes, Compounds
Oil Separation Test Assembly	Measures oil separation from a grease under certain conditions to simulate storage behavior in original containers.	Oil separation by weight %	DIN 51 817, IP121/63	Greases, Pastes, Compounds
Oxidation Resistance Apparatus (Norma Hoffmann)	Measures oil separation from a grease under certain conditions to simulate storage behavior in original containers.	Pressure loss in bar	ASTM D942, DIN 51 808, IP 142, FTM 791 -3453, FTM 791-5314	Greases, Pastes, Compounds
Penetration Apparatus	Determines the cone penetration of lubricating greases.	Cone penetration in 1/10 mm	DIN 51 804 T2, ISO 2137,ASTM D1403-69	Greases, Pastes, Compounds
Rotational Viscometer	Determines kinematic viscosity by measuring the time an oil takes to pass through a tube.	mPas	DIN 51 810	Greases, Pastes, Compounds
Ubbelohde Viscometer	Determines the apparent dynamic viscosity of a grease using a rotational viscometer.	mm2/s=cSt	ASTM D445, ASTM D446, ASTM D2170, DIN 51 562	Olis

Solutions and Services

As experts in industrial lubrication, DuPont and Molykote® can help you operate your machines at their maximum efficiency, improving reliability and reducing maintenance and downtime. Through our distributors and technical service, we can provide the following lubrication solutions:

Consolidation and Optimization of Lubrication:

By consolidating and optimizing the purchase of the correct lubricants from a single integrated supplier, you can reduce overall maintenance costs, extend oil change intervals, prolong machinery lifespan, and simplify the lubrication procurement process.

Control and Verification of Best Lubrication Practices for Machinery:

We provide independent consultants to visit your facility and help identify opportunities for production improvement by inspecting machinery, analyzing used oils, filtration systems, and lubricant storage; they will also interview key personnel. A comprehensive report will be developed and reviewed with your key staff.

On-Site Training Courses:

We offer a wide range of industrial lubrication seminars to meet the needs of every professional. Our courses cover topics such as the basics of machine lubrication, best lubrication practices, and the importance of oil analysis (how to collect samples and interpret analysis results). These courses are also available to the public if you'd like to experience the seminar before offering it to your team.

Lubrication Compliance:

Compliance is an important factor affecting both Maintenance and Production. We can create procedures that document every stage of maintenance with traceability for verification purposes. This can be integrated into your existing lubrication plan, or we can suggest what you need for a complete "Total Lubrication" program.

Lubricant Laboratory Testing:

The Molykote® Testing Lab saves time and money by performing a series of physical and mechanical tests to determine the most appropriate lubricant choice, identify performance standards and application specifications, and establish comparison data between lubricants. This can be done for any type of lubricant, not just Molykote®.

Integrated Oil Analysis:

Optimize machinery protection with our Integrated Oil Analysis program. It's designed to tell you exactly how your lubricant is performing over time, whether it's Molykote® or any other brand. Based on the results and the specific requirements of your application, it will suggest how to carry out maintenance.

Analytical Testing:

With DuPont's extensive experience as one of the largest producers of chemical products, we offer a wide variety of modern analytical testing procedures that can also meet your specific needs.

Do you have other challenges related to lubricants, lubrication, reliability, maintenance, or mechanical efficiency?

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Don't think about lubricants, think about **Smart Lubrication™**.

For more information, contact your local distributor or visit **www.molykote.com**.



Glossary

**Abrasive wear** – Mechanical wear caused by the sliding of two surfaces in reciprocal motion.

**Thickening agent** – Usually a metallic soap, but also silica gel, bentonite, urea, PTFE, etc., that when combined with base oil helps to form a grease.

**Additives** – Substances added in small quantities to lubricants to improve their performance.

**EP Additives (Extreme pressure)** – Substances added in small quantities to lubricants to enhance their load resistance and wear resistance.

**Anti-friction coating** – Lubricant lacquer. A suspension of solid lubricants and binding resins in a solvent that, after application, forms a solid dry lubricating film. These coatings can be either thermosetting or air-curing. See binding resin.

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

**Friction** – The resistance opposed by a solid body to its sliding on the surface of another solid body.

**Stick-slip** – The jerky motion of two surfaces in relative motion caused by different friction coefficients between boundary lubrication and hydrodynamic lubrication.

**Molybdenum disulfide (MoS<sub>2</sub>)** – A solid lubricating substance.

**Welding load** – Typically measured using a machine called a Four-ball tester. The welding load (measured in Newtons [N]) is the lowest load that, with a given lubricant, causes the welding of the four balls.

**OK Load** – Indicates the load resistance of a lubricant. It is the maximum permissible load before the lubricant film breaks without causing mechanical welding of the specimens. It is measured in Newtons [N].

**Chemically inert** – A lubricant that does not react with any substance.

**Coefficient of friction** – The coefficient of friction is a number that represents the ratio between two forces: the tangential forces (F) opposing the displacement of two surfaces and the load applied.

**Colloidal** – A state of dispersion of small particles (10-5 to 10-7 cm) in a liquid that behaves like a solution (no sedimentation).

**Consistency** – The hardness of a lubricant characteristic of a grease, which opposes internal resistance to a deforming force. It is measured by worked penetration and unworked penetration, and is indicated according to the NLGI (National Lubricating Grease Institute). To simplify the designation of a lubricant's consistency, a consistency class has been defined, representing a range of worked penetration values.

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

**Contact corrosion** – Rust that forms between mating surfaces. It is a form of wear on mechanical assemblies subjected to small amplitude and high-frequency oscillations. Small metal particles removed by vibrations, when in contact with oxygen, turn into rust, which eventually locks the mating surfaces. Another drawback of contact corrosion is the accelerated fatigue of the components subjected to this phenomenon, speeding up their failure. It can be prevented with the use of separator films based on solid lubricants.

**Density** – The weight of a substance in grams per cm<sup>3</sup> (ml), usually measured at 20°C.

**Cleaner** – A cleaning agent used to dissolve and remove residues and deposits from sliding surfaces.

**Dispersion** – A binary system where one substance is dispersed in another (liquid) substance.

**Emcor** – A test to control the corrosion protection of a lubricant in ball bearings in the presence of water. Lubricated bearings are tested in the presence of water for one week. The corrosion value is measured.

**DN Factor** – An indication of a bearing's speed. It is the average diameter of a bearing in mm multiplied by the number of revolutions per minute.

**Fluorosilicone** – Silicone containing fluorine atoms in its molecules.

**Grease** – A plastic lubricant; a stable suspension of a thickening agent in an oil.

**Complex grease** – Grease thickened with a combination of a soap and a long-chain organic acid, along with the salt of a short-chain organic acid, using the same cation. Particularly suitable for long-lasting applications and high temperatures.

**H1, H2, H3** – See NSF.

**Stress cracks** – Breaks in lubricated parts caused by the migration of the lubricant into the material (e.g., screws and plastic parts).

**Inhibitors** – Additives for lubricants to prevent aging and corrosion.

**Temperature range** – The range of temperature values within which the lubricant maintains its performance.

**Lithium** – An alkali metal whose hydroxide, when mixed with organic acids, is used to manufacture soap thickeners for lubricants.

**Lubricants** – Substances used to reduce friction and wear between two surfaces in relative motion.

**Adhesive lubricants** – Lubricants with adhesion promoters; they resist centrifugal forces.

**Solid lubricants** – Solid substances with low friction coefficients that reduce wear and prevent seizure in mechanical components.

**Special lubricants** – Lubricants with specific properties and characteristics for certain special applications.

**NSF (National Sanitation Foundation)** – An organization that develops standards, certifies products, and provides education in the fields of health and safety

H1 Category:	Lubricants approved for "incidental" food contact according to 21 CFR 178.3570 may be used in the food industry where there is a possibility of accidental contact with food.
H2 Category:	Lubricants not approved for "incidental" food contact may be used in the food industry where there is NO possibility of lubricant/food contact.
H3 Category:	Soluble Oils

**Base oil** – The main component of greases and lubricants.

**Synthetic oil** – Unlike mineral oils, it is artificially manufactured. Synthetic oils generally have a good viscosity-temperature curve, a low tendency to carbonize, high resistance to temperature, and good chemical resistance.

**Pastes** – A mixture of solid lubricants and oil used to form a thin lubricating film.

**Penetration** – A measure of the consistency, or resistance a grease opposes to deformation. Consistency is measured by the penetration of a standard cone into a grease mass. The measurement is done in 1/10 mm. (The higher the number, the softer the grease.)

**Worked penetration** – Lubricants often change their consistency under mechanical stress. It is important to measure the worked penetration, which is the test of the consistency of a grease that has been dynamically "worked."

**Unworked penetration** – The consistency of a grease or paste in its resting state, as it is when the material is supplied.

**Specific gravity** – See density.

**Polyalphaolefin (PAO)** – A synthetic hydrocarbon with a well-defined molecular structure. It performs better at low and high temperatures and has a better viscosity/temperature diagram compared to regular mineral oils.

**Pour point** – The lowest temperature at which an oil can circulate.

**Adhesion promoter** – An additive for oils and greases used to improve adhesion to surfaces (e.g., polyisobutene).

**Salt spray test** – A test that indicates the degree of corrosion on steel sheets exposed to salt spray. The metal sheets are treated with the product being tested and placed in a chamber with a saline humid atmosphere. The number of hours until certain levels of corrosion appear is measured.

**Auto-ignition point** – The temperature at which oil ignites on its own without the presence of a flame.

**Drop point** – The temperature at which a grease transitions from a plastic state to a liquid state. It indicates the temperature at which the grease will liquefy in a bearing.

**Flash point** – The lowest temperature at which, upon gradual heating of the oil, sufficient vapors are formed that briefly ignite when exposed to a flame.

**Pour point** – The temperature at which the oil loses its ability to flow due to continuous cooling. The solidification of the oil is based on the deposition of paraffin crystals.

**Binding resin** – The non-volatile component in paints and varnishes that binds the pigments to the base substance during film formation.

**Water resistance of grease** – The behavior of a lubricating grease in the presence of water is crucial when used in bearings. It is important to use a water-resistant grease that can also absorb small amounts of water that accumulate in the bearings (emulsifiable).

**Resistance to aging** – The ability to resist the signs of aging caused by negative influences such as overheating, oxygen absorption, the presence of certain metals like copper and lead, intense light, etc. This resistance can be enhanced with special additives (e.g., antioxidants).

**Oxidation resistance** – The strength of a lubricant to resist reacting with oxygen.

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

**Swelling** – Due to the effect of lubricants, vapors, or gases, sealing materials made of rubber and elastomers can experience swelling, which damages their properties.

**Breaking-In** – During the breaking-in and starting process, the asperities of the sliding surfaces are smoothed with the help of solid lubricants.

**Soap in lubricating grease** – A compound of a fatty acid and a metallic hydroxide. The choice of fatty acid and metallic hydroxide (calcium, lithium, aluminum) modifies the properties of the grease, such as water and temperature resistance.

**Oil separation** – The oil separates from the lubricating grease during storage or due to mechanical, dynamic, or temperature stresses.

**Silicone** – A polymer with good resistance to oxidation and temperatures, used as a lubricant for both low and high temperatures.

**Solvent** – A substance capable of dissolving a material and generally used as a thinner or degreaser.

**Suspension** – A uniform and stable distribution of solid materials in a liquid, where the solids are not dissolved by the liquid.

**Tribology** – The study, scientific research, and technical application of the conditions and aspects related to friction and wear, and thus lubrication and lubricants.

**Wear** – Mechanical abrasion caused by friction between two surfaces in relative motion.

**Pitting** – The formation of wear in the shape of small craters, particularly in gears, caused by material fatigue.

**Dynamic viscosity** – A measure of internal friction during the flow of a lubricating oil.

**Viscosity (Measurement of)** – Viscosity is measured with various viscometers. The unit of measurement is mm<sup>2</sup>/s. It is essential to indicate the temperature at which viscosity is measured, as it varies significantly with temperature (oils become less viscous as temperature increases).

**Viscosity** – The viscosity of an oil can be defined as the resistance the oil opposes to the internal flow of its molecules sliding against one another.

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## How to Contact Us

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