

MOLYKOTE® 4 Electrical Insulating Compound

Greaselike material containing an inert silica filler in combination with selected polydimethyl silicone fluids

Features & benefits

- High dielectric strength
- Low volatility
- Moisture-resistant
- Good thermal oxidation and chemical stability
- Meets requirements of SAE AS 8660
- Certification to NSF 51 and 61
- Meets requirements of FDA 21 CFR 175.300
- Retains its greaselike consistency from -40°C (-40°F) to +200°C (392°F)
- Odorless
- Highly water-repellent
- Adheres readily to dry metals, ceramics, rubber, plastics and insulating resins

Applications

A moisture-proof seal for aircraft, automotive and marine ignition systems and spark plug connections, disconnection junctions in electrical wiring systems also in electrical assemblies and terminals. Used as a seal and lubricant for cable connectors, battery terminals, rubber door seals, switches, and rubber and plastic O-rings and as an assembly lubricant for various metal-on-plastic and metal-on-rubber combinations.

How to use

MOLYKOTE® 4 Electrical Insulating Compound can be applied by hand, specially designed automated equipment, brushing or wiping. Certain designs of grease guns may seize up with silicone compounds; test prior to use.

A thinner consistency can be achieved by dispersing in solvents such as xylene, mineral spirits and methyl ethyl ketone. MOLYKOTE® 4 Electrical Insulating Compound can then be applied by brushing, dipping or spraying.

MOLYKOTE® 4 Electrical Insulating Compound should not be applied to any surface that will be painted or finished. Such coatings may not adhere to the silicone-treated surface.

Typical properties

Specification writers: These values are not intended for use in preparing specifications. Please contact your local MOLYKOTE® sales representative prior to writing specifications on this product.

Standard ⁽¹⁾	Test	Unit	Result
CTM 0176	Color		White; translucent
CTM 0191	NLGI consistency number		2
	Penetration unworked	mm/10	220
	Penetration worked 60, max	mm/10	310
CTM 0033A	Bleed, 30 hours/200°C (392°F), max	%	6.0
CTM 0033A	Evaporation, 30 hours/200°C (392°F), max	%	2.0
	Service temperature range ⁽²⁾	°C °F	-40 to 200 -40 to 392
	Melting point	°C (°F)	None
CTM 0022	Relative density at 25°C (77°F)	g/ml	1.0

Electrical properties

CTM 0114	Dielectric strength, 1.27 mm gap	V/mil	460
CTM 0112	Dielectric constant at 100 Hz		2.98
CTM 0112	Dielectric constant at 100 kHz		3.01
CTM 0112	Dissipation factor at 100 Hz		<0.0001
CTM 0112	Dissipation factor at 100 kHz		<0.0002
CTM 0249	Volume resistivity at 23°C (73°F)	Ohm-cm	1.1 x 10 ¹⁵
CTM 0171	Arc resistance	seconds	135

⁽¹⁾CTM: Corporate Test Method; copies of CTMs are available on request.

⁽²⁾The maximum temperature limit may approach 260°C (500°F) with no oxygen present.

If contaminated by a silicone coating, parts can be wiped or washed with solvent, washed with detergent, or immersed in an alcoholic potassium hydroxide solution and then rinsed in clear water before painting.

Dispensing

Separation and compaction can occur with some high-pressure dispensing equipment. This should be considered when designing dispensing systems for use with MOLYKOTE® 4 Electrical Insulating Compound.

For information on appropriate dispensing equipment for your application, please contact DuPont.

Solubility

MOLYKOTE® 4 Electrical Insulating Compound is insoluble in water, methanol, ethanol or mineral oil and is soluble in mineral spirit and methyl ethyl ketone. The suitability of a particular solvent should be based on testing prior to use. Flammability and toxicological properties should be important considerations in the choice of solvent.

Dimethyl silicone compounds should not be applied to O-rings or other components made of silicone rubber because they will destroy the silicone rubber.

These compounds will also slightly swell natural butyl rubbers.

Chemical resistance

MOLYKOTE® 4 Electrical Insulating Compound is not greatly affected by mineral oils, vegetable oils or air. It is generally resistant to dilute acids and alkalines, and to most aqueous solutions. As each application may vary in chemical composition, pressure, flow velocity, relubrication requirements and equipment design, it is recommended that MOLYKOTE® 4 Electrical Insulating Compound be tested before adopting for regular use.

MOLYKOTE® 4 Compound is not intended to be used with liquid oxygen and should not be used in applications requiring LOX compatibility without thorough testing for the specific application.

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Usable life and storage

When stored in the original unopened containers, this product has a usable life of 60 months from the date of production.

Packaging

This product is available in different standard container sizes. Detailed container size information should be obtained from your nearest MOLYKOTE® sales office or MOLYKOTE® distributor.