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.

<table>
<thead>
<tr>
<th>Standard(1)</th>
<th>Test</th>
<th>Unit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTM 0176</td>
<td>Color</td>
<td></td>
<td>White; translucent</td>
</tr>
<tr>
<td>CTM 0191</td>
<td>NLGI consistency number</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CTM 0033A</td>
<td>Bleed, 30 hours/200°C (392°F), max</td>
<td>%</td>
<td>6.0</td>
</tr>
<tr>
<td>CTM 0033A</td>
<td>Evaporation, 30 hours/200°C (392°F), max</td>
<td>%</td>
<td>2.0</td>
</tr>
<tr>
<td>CTM 0022</td>
<td>Relative density at 25°C (77°F)</td>
<td>g/ml</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Electrical properties

<table>
<thead>
<tr>
<th>Standard(1)</th>
<th>Test</th>
<th>Unit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTM 0114</td>
<td>Dielectric strength, 1.27 mm gap</td>
<td>V/mil</td>
<td>460</td>
</tr>
<tr>
<td>CTM 0112</td>
<td>Dielectric constant at 100 Hz</td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td>CTM 0112</td>
<td>Dielectric constant at 100 kHz</td>
<td>3.01</td>
<td></td>
</tr>
<tr>
<td>CTM 0112</td>
<td>Dissipation factor at 100 Hz</td>
<td>&lt;0.0001</td>
<td></td>
</tr>
<tr>
<td>CTM 0112</td>
<td>Dissipation factor at 100 kHz</td>
<td>&lt;0.0002</td>
<td></td>
</tr>
<tr>
<td>CTM 0249</td>
<td>Volume resistivity at 23°C (73°F)</td>
<td>Ohm-cm</td>
<td>1.1 x 10¹⁶</td>
</tr>
<tr>
<td>CTM 0171</td>
<td>Arc resistance</td>
<td>seconds</td>
<td>135</td>
</tr>
</tbody>
</table>

(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 alkalis, 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.

**Handling precautions**

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION.

**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.