



814 Hillrose Avenue  
Dayton, OH 45404  
(937) 228-2191 (phone)  
(937) 228-5171 (fax)  
www.hohmanplating.com  
sales@hohmanplating.com

## SURF-KOTE® M-2049

### HIGH TEMPERATURE DRY FILM LUBRICANT

#### SL-141/02

#### SCOPE:

Surf-Kote® M-2049 is a self-bonding solid film lubricant containing molybdenum disulfide and other lubricating pigments blended with a heat curing resin. It is suspended in a suitable volatile solvent for application to properly prepared surfaces. It contains no graphite or powdered metals.

#### PROPERTIES OF SURF-KOTE® M-2049:

Weight 10 lbs./gal  
Viscosity, 19 sec. @ 75°F. #2 Zahn Cup  
Coverage 600-1000 ft<sup>2</sup> per gallon (.0003-.0007)  
Flash Point 74°F. Open Cup  
Shelf Life 12 months

#### THERMAL STABILITY OF SURF-KOTE® M-2049:

The adhesion and performance are not affected after exposure to temperatures from 65°F. to 500°F.

#### FILM ADHESION:

Determined acceptable by thermal shock and tape test methods (ASTM D-2511 and D-2510).

#### RESISTANCE OF SURF-KOTE® M-2049:

The adhesion and performance is not affected after immersion in hydrocarbons, hydraulic fluids, jet fuels, silicone fluids and other similar materials

#### CORROSION RESISTANCE:

Salt Spray, ASTM-B-117 1000 + hours  
Humidity Test, 100% Humidity, 115°F. 5000 + hours

#### WEAR LIFE & LOAD CARRYING CAPACITY:

Surf-Kote® M-2049 provides excellent endurance results when tested over a wide range of speeds and loads. Some typical results for various test machines are as follows:

Hohman A-6 A Double Rub Block Machine  
Timken Test Cup Rub Block of 4130 Steel H.T. 60 Rc  
Velocity 147.6 ft./min.  
Load 250 lbs./Rub Block  
Average Endurance Life  $2.13 \times 10^5$  ft.

Single Rub Block Machine  
Timken Test Cup Rub Block of 4130 Steel H.T. 60 Rc  
Velocity 26 ft./min.  
Load 630 lbs.  
Average Endurance Life  $4.85 \times 10^5$  ft.

Falex  
Test Specimen Falex "V" Block & Pin Configuration  
Velocity 290 R.P.M.  
Load 1000 lbs.  
Average Endurance Life 500 Minutes



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**RECOMMENDED SURFACE PREPARATION FOR MAXIMUM PERFORMANCE:**

Material	Pretreatment
Aluminum and Aluminum Alloys	Anodize not sealed (MIL-A-8625-Type II) or chemical film (MIL-C-5541)
Brass and Copper Alloys	Chemical etch (Ferric Chloride) or Black Chemical Finish (Mil-F-495)
Cadmium, Tin or Zinc Plated	Phosphate or conversion coat
Magnesium and Magnesium Alloys	Hydrofluoric acid etch or DOW 7
Nickel, Chromium, Rhodium or Silver Plated	Oxide or vapor blast
Stainless Steel, Corrosion or Heat Resistant Steel	Vapor blast or lubrite S.S.
Titanium and Titanium Alloy	Phosphate (MIL-DTL-16232G-Type M) or light grit blast
	Anodize or vapor blast

**APPLICATION PROCEDURE:**

Surf-Kote® M-2049 is suitable for either spray, dip or brush coating. However, a spray method is preferred, using a touch-up type spray gun with a minimum atomizing air pressure. Tumble spraying may be used when coating thickness control is not a critical factor.

The most suitable film thickness for maximum performance is 0.0003 to 0.0007 inch. If heavy coatings are necessary, it is preferable to build the film in multiple coatings. The film should be continuous, smooth and should air dry 30 minutes before baking or between multiple coats. The material must be thoroughly agitated before using to insure a uniform deposit of the highest quality.

The container should be tightly sealed when not using to avoid solvent escape. A mixture of 50% Toluene and 50% MEK should be used if additional solvent is needed. The spray equipment should be cleaned with a mixture of 50% Toluene and 50% MEK.

**CURING CYCLE:**

Surf-Kote® M-2049 should be air dried for 30 minutes and heat cured at 400°F for one hour. A cure temperature of 300°F for 8 hours is satisfactory, but the endurance life is reduced approximately 10%.

**SUGGESTED USES FOR SURF-KOTE® M-2049:**

**AUTOMOTIVE**

- |  |                            |
|--|----------------------------|
| Electric Windows                         | Outside Mirrors            |
| Windshield Wipers                        | Speedometer Cables         |
| Valves-Break-in                          | Aluminum Pistons-Break-in  |
| Door Lock Mechanisms                     | Electric Seats             |
| Gas Cap Hinge Pins                       | Servo Motors               |
| Turn Signals                             | Anti-Skid Brake Mechanisms |
| Load Adjustor Slides on Tractor Trailers |                            |
| Oil-Pumps, Transmission Break-in         |                            |

**AEROSPACE**

- |                          |                  |
|--------------------------|------------------|
| Aircraft Splines         | Universal Joints |
| Radar Equipment          | Starter Bushings |
| Close Fit Assembly Parts | Actuator Parts   |
| Tubular Controls         |                  |

**MISCELLANEOUS**

- |  |                           |
|--|---------------------------|
| Swivel Chairs                                    | Drapery Traverse Rods     |
| Cameras  | Glass and Bottle Industry |
| Metal Working                                    |                           |
| Electric Motors-Sliding and Oscillating Surfaces |                           |



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**HANDLING:**

Surf-Kote® M-2049 is a flammable material and safeguards should be employed accordingly. The material contains metallic compounds and solvents that may have harmful effects to humans if prolonged breathing of the vapors or dust is practiced. Smoking and consuming food in the spray area should not be practiced and Surf-Kote® M-2049 is not to be used on equipment which will come in contact with food products.

**MATERIAL AVAILABILITY:**

Surf-Kote® M-2049 is available in quart, and gallon cans.

**PROCESS SPECIFICATIONS:**

For more complete information on surface preparation, application, and curing see SL-204 "Surf-Kote® Process Specifications."

**WARRANTY:**

Hohman Plating & Mfg., LLC, makes no warranty or guarantee, express or implied, of merchantability or fitness for particular purpose of the product. In the event of defect, in no case will Hohman be liable for more than the price paid for this product. Acceptance of merchandise constitutes acknowledgement of this warranty disclaimer.