

Information About *Molykote*® 3402-C Anti-Friction Coating

Type

Dispersion of solid lubricants, corrosion inhibitors, and an organic binder

Cure

Room temperature

Physical Form

–As Supplied

Low-viscosity liquid

–As Cured

Dry lubricating film

Special Properties

Fast curing at room temperature; long-lasting corrosion protection; meets MIL-L-23398 C, MIL-L-46147, and MIL-L-8937 D requirements

Primary Uses

Touch-up of oven-cured lubes, materials requiring air-cure lubricant, replacement of metal platings

DESCRIPTION

Molykote® 3402-C Anti-Friction Coating is a selected blend of solid lubricants, corrosion inhibitors, and an organic binder dispersed in a solvent. Coatings of this material cure within 2 hours at room temperature and in less than 10 minutes at higher temperatures. This material provides excellent corrosion protection. It lubricates for extended periods under a variety of extreme environments and heavy loads, including a temperature range of -198° to 300°C (-324° to 572°F).

Molykote 3402-C Anti-Friction Coating is designed to meet the requirements of military specifications MIL-L-23398 C, MIL-L-46147, MIL-L-46010 Type I (per SAE AS-1701), Rock Island Arsenal Purchase Descriptions PD42 and 703, NATO Codes S 749 and S 1738, and DEF 91-19/2, STAE 34593, LN 9368-5900/5901.

Molykote 3402-C Anti-Friction Coating does not contain graphite, powdered metals, or components containing fluorine.

TYPICAL APPLICATIONS

Molykote 3402-C Anti-Friction Coating is ideal as a lubricant for various aluminum/aluminum, aluminum/steel and steel/steel mating surfaces. Specific examples are parts that must be protected from corrosion in storage and then lubricated during running-in or use. Typical items are spare parts or manufacturing inventories for aircraft, automotive, farm, railroad, and construction equipment.

These and other industrial applications benefit from the ability of *Molykote* 3402-C Anti-Friction Coating to provide long-lasting lubrication under conditions of heavy loads, high and low speeds, and dirty or abrasive environments. It is excellent for equipment used intermittently, as well as for run-in lubrication of new or rebuilt equipment.

TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

Viscosity, DIN No. 3, 20°C (68°F), seconds.....	70 to 80
Specific Gravity at 20°C (68°F), g/cm ³	1.01
Color	Gray
Service Temperature Range, °C (°F)	-198 to 300 (-324 to 572)

Specification Writers: Please obtain a copy of the Dow Corning Sales Specification for this product and use it as a basis for your specifications. It may be obtained from any Dow Corning Sales Office, or from Dow Corning Customer Service in Midland, MI. Call (517) 496-6000.

HOW TO USE

Surface Preparation

In all cases, parts that will be coated should be clean and degreased prior to application. *Molykote* 3402-C Anti-Friction Coating may be applied directly to ground or highly machined bearing surfaces; however, certain surface pretreatment (see Table II) can substantially enhance the coating endurance life and corrosion protection.

Application Methods

Molykote 3402-C Anti-Friction Coating may be applied by spraying, centrifuging, dipping, tumbling, or brushing, but spraying usually produces the most uniform film thickness.

The thickness of the cured film should not exceed 20 μm . The material should be agitated continuously since the solids tend to settle. *Molykote* 3402-C Anti-Friction Coating requires no dilution before use unless solvent has been lost by evaporation. If this occurs, the original viscosity can be restored by adding isopropyl alcohol.

Caution

Molykote 3402-C Anti-Friction Coating is supplied in a flammable solvent. Keep the material away from heat and open flame. Use only with adequate ventilation. Avoid prolonged breathing of vapors and prolonged or repeated skin contact. Contact with the eyes will cause irritation; if this happens, flush eyes with water for 15 minutes and obtain medical attention.

Cure

Coatings of *Molykote* 3402-C Anti-Friction Coating cure at normal room temperatures (20°C/68°F). The film dries to the touch in 10 minutes and cures in 2 hours. Accelerated heat cures can also be used. At 50°C (122°F), the coating cures in 10 minutes.

SHIPPING LIMITATIONS

Molykote 3402-C Anti-Friction Coating contains a flammable solvent. It is listed as a flammable liquid for shipping purposes.

STORAGE AND SHELF LIFE

Molykote® 3402-C Anti-Friction Coating has a shelf life of 60 months from date of manufacture.

Store below 32°C (89°F). The flash point when supplied is 16°C (60°F). Keep the material away from heat and open flame.

PACKAGING

Molykote 3402-C Anti-Friction Coating is available in 500-g (1.1-lb) cans and 5-kg (11-lb) containers.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

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

INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY WRITING TO DOW CORNING CUSTOMER SERVICE, OR BY CALLING 1-517-496-6000.

LIMITED WARRANTY— PLEASE READ CAREFULLY

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Table I: Typical Functional Properties of Molykote 3402-C Anti-Friction Coating, Using MIL-L-23398 C/RIAPD 703 Requirements

These values are not intended for use in preparing specifications.

Film Adhesion, method 3810 of Fed. Std. 791	Pass
Thermal Stability, method 3805	Pass
Fluid Resistance, method 3805	Pass
Endurance Life, minutes	
ASTM D 2670 Falex Test, Steel, 60/150 ¹	>250
ASTM D 2714 LFW-1 Standard, cycles ²	150,000
ASTM D 2670 N Load Carrying Capacity	13,500
Corrosion Protection, method 3817, 30 hours over deionized H ₂ O	
Steel	Pass
Aluminum	Pass
Corrosion Protection, method 4001, 125 hours, 5% salt spray	
Steel, phosphated	Pass
Fluid Resistance When Immersed for 24 hours at 25°C (77°F) in	
Jet Fuel MIL-T-5624, JP4	Pass ³
Lubricating Oil MIL-L-23699	Pass ³
De-Icing/Defrosting Fluid MIL-A-8243	Pass ³
Hydraulic Fluid MIL-H-88282	Pass ³
Dow Corning [®] 550 Fluid	Pass ³
Trichloroethylene MIL-T-81533	Pass ³
Lubricating Oil MIL-L-2104 grade 10	Pass ³
Cleaning Compound MIL-C-3721	Pass ³
ASTM D 1193 Distilled Water	Pass ³
Type III	

¹Specimens sandblasted.

²Tested on LFW-1 machine at 72 rpm, 2850 N load, Rc60 steel, sandblasted specimens.

³No film deterioration or adhesion loss.

Table II: Recommended Pretreatment for Metal Surfaces

Pretreatment	Steel	Plated Cr or NI	Metals Cd or Zn	Al Alloys	Cu Alloys	Mg Alloys	Ti Alloys
Degrease	X	X	X	X	X	X	X
Remove Oxides:							
Pickling Sandblast					X		
(Alu-oxide 180 µm)	X	X			X		X
Anodize per MIL-A-8625 C				X			
Dichromate per MIL-M-3171 C						X	
Phosphate per MIL-P-16232D, type M, Class 1	X		X				

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