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Catalog Numbers: 60835Q, 60835G & 60835P

Molydag[®] 254

Resin Bonded MoS₂ Lubricant Coating

DESCRIPTION

Molydag 254 is one of a series of Acheson resin-bonded lubricant coatings designed to provide dry film lubrication in a variety of industrial, consumer, and military applications.

Molydag 254 is a synergistic combination of MoS₂ and other lubricants dispersed in an epoxy resin solution. **Molydag 254** can be applied by standard brush, dip-spin, or spray techniques.

Molydag 254 provides lifetime lubrication and good corrosion resistance for components which are inaccessible after assembly, but nevertheless must continue to function reliably.

Molydag 254 provides an effective performance, even as a very thin film (0.0003 inch or 8 microns), thus there is little interference with operating tolerances.

ADVANTAGES

- Good adhesion to metals
- Low coefficient of friction
- Good wear life (resistance to fretting and galling)
- Corrosion resistance
- Resistance to many chemicals and solvents
(see MIL-L-8937-D chemical resistance requirements)

TYPICAL APPLICATIONS

- Construction Equipment
- Business Machines
- Jet Engine Parts
- Woodworking Equipment
- Mining Equipment
- Safety Equipment
- Cold-Heading Machinery
- Threaded Connections
- Farm Machinery
- Aircraft Fasteners
- High Tension Nuts and Bolts

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guaranty of their accuracy is made. In every case, we urge and recommend that purchasers, before using any product in full scale production, make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the American Chemistry Council[®] program.

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**TYPICAL
PROPERTIES**
(as supplied)

		<u>Molydag 254</u>
Lubricant	:	molybdenum disulfide and other lubricating solids
Color	:	dark gray
Consistency	:	liquid
Binder	:	epoxy resin
Density	:	11.2 lb/gal (1.34 kg/l)
Flash point	:	24°F (-4°C)
VOC (dehydrated)	:	5.0 lb/gal (594 g/l)

**TYPICAL
PROPERTIES**
(cured coating)
related to
requirements
of Military
Specification
MIL-L-8937-D

Color	:	dark gray
Coefficient of friction	:	0.14 (static)
Service temperature		
continuous	:	275°F (135°C)
intermittent	:	300°F (149°C)
Falex endurance life*	:	250 minutes minimum
Falex MLCC*	:	2500 pounds minimum
Corrosion test (ASTM D-2649)	:	500 hours
Fluid resistance**	:	120 hours
Cure	:	60 minutes @ 400°F (204°C)

**Coating applied over a phosphate pretreatment.*

***MIL-L-8937-D test fluids: hydraulic fluid, motor oil, turbine fuel, aircraft turbine lubricating oil, silicone base damping fluid, trichlorethane, anti-icing fluid, weapon cleaning solvent, reagent water.*

**APPLICATION
DETAILS**

Surface Preparation

The performance obtained by a coating of **Molydag 254** depends on the care given to substrate preparation, application, and curing. The following pretreatments are recommended:

Steel	:	Grit or vapor blast, degrease and chemically pretreat with Lubrite 2*, Granodine 11*, or Bonderite 100*.
Stainless Steel	:	Grit or vapor blast, degrease.
Aluminum	:	Degrease or solvent clean and pretreat with Alodine 1200* or equivalent. Coating may also be applied over anodized surface.
Copper Alloys	:	Degrease or solvent clean, grit blast, or chemically pretreat with Ebonol C**.

**Parker + Amchem*

***Enthone, Inc.*

Equivalent products are available from Turco, Detrex, MacDermid, and others.

Mixing

Molydag 254 lubricant is supplied as a one-component concentrate at a solids concentration of 55 percent. MIL-L-46010 and MIL-L-8937-D require application at 20% solids. For non-military applications, **Molydag 254** is normally diluted at ratios of 4:1 to 2:1 (product:solvent) by weight. Dilution depends on the method of application to be used and the coating thickness desired. A 1:1 blend of toluene and MEK (methyl ethyl ketone) can be used as a diluent. Mixing is best accomplished by mechanical agitation.

**APPLICATION
DETAILS**
(Continued)

Application

Molydag 254 may be applied by spray, dip-spin, or brush methods according to individual application requirements.

For spray application, external atomizing type spray guns are recommended, e.g.: DeVilbiss, AV-601 type; Paasche Air Brush Type AUR-ARF 3-3 multiple head assembly.

Adjust the spray gun to provide a well-atomized spray at 25 to 40 psi (1.8 to 2.8 kg/sq cm) air pressure. For maximum corrosion resistance, apply multiple thin coats with a ten-minute air dry period between coats to minimize pin holes. Oven curing is required only after the final coat of lubricant is applied.

Note: It is recommended that an agitator-type spray cup be used to maintain product suspension.

Curing

A normal cure schedule is a cure of 60 minutes at 300°F (149°C). However, performance may be improved with a cure of 60 minutes at 400°F (204°C). For example, this cure cycle increases the Falex endurance life.

**STORAGE/SHIPPING
HANDLING**

Shelf life for this product is 2 years from date of qualification under original seal. Keep container tightly closed when not in use. Store in a cool, well ventilated area. Empty containers may retain hazardous properties. Follow all MSDS/label warnings even after container is emptied.

**APPLICATION
ASSISTANCE**

Acheson's **Application Specialists** are available to assist you in production start-up with **Molydag 254**. For more information, contact Acheson Colloids Company, (800) 255-1908, or visit our website at www.achesonindustries.com for the Acheson global location nearest you.

HEALTH & SAFETY

Harmful if swallowed, inhaled, or absorbed through skin. May cause eye irritation. Wash thoroughly after handling. Keep container tightly closed when not in use. Use with adequate ventilation. Avoid breathing vapor. See Acheson's Material Safety Data Sheet for proper first aid instructions.

NOTE

Molydag is a registered trademark of Acheson Industries, Inc.

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