Technical Data

Ecoalube® 642

MIL Spec, MoS2 Solid Film Lubricant

Everlube® Products

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Product Description

Ecoalube 642 is a thermally cured, MoS2 based solid film lubricant with a high molecular weight epoxy binder system. This coating provides excellent chemical resistance, wear life, abrasion resistance and performs best in higher load carrying applications. Ecoalube 642 is approved/qualified to many aerospace and industrial specification; these listings can be verified at http://www.everlubeproducts.com/specifications.php. When requesting pricing or ordering of product, listing of the specification and revision is required to assure product certification compliance

Features / Benefits

- Excellent wear life
- Excellent chemical resistance
- Excellent abrasion resistance
- Ideal for higher load carrying applications

Markets

- Aerospace/Defense
- Mechanical Components
- Chemical Processing
- Industrial Machinery & Equipment

Typical Applications

- Bushings, shafts, splines and cams
- Slides, guides and rails
- Virtually all fasteners
- Threaded connectors and disconnects

Physical Properties

Lubricating Solid	MoS_2
Binder	High molecular weight epoxy
Color and Appearance*	Gray/Black matte finish
Carrier	Solvent Borne
Solids (by weight)*	40% to 44%
Density*	9.6 ± 0.5 lb/gal (1150 ± 60 grams/liter)
Flash Point	24°F (-4°C)
Volatile Organic Compound	695 grams/liter (5.8 lb/gal)
Theoretical Coverage[1]	540 ft²/gal @ 0.5 mils (13.2 m²/liter @ 12.7 microns)
Alternative or Repair Coatings	A low VOC alternative coating for Ecoalube 642 is our Everlube 9002. For touch-up applications, Perma-Slik G or Lubri-Bond 220 works well with Ecoalube 642.

Processing Information[2]

Dry Film Thickness	0.2 to 0.5 mils (5 to 13 microns)
Dilution/Cleanup Solvent	MEK, 642 Solvent or 50/50 MEK/Toluene (by volume)
Dilution Ratio (for spray)	1:3 (Product to Solvent by volume) Adjust as needed
Cure Cycle	1 hr @ 400°F +/- 25°F
Suggested Pretreatment	Grit Blast and/or Phosphate
Suggested Application Methods	Dip Spin / Spray

For additional information, please see Processing Bulletin # 3000-A

Typical Functional Properties

	ASTM Test Method	Value
Corrosion Resistance*		
Test Panel	ASTM B117	>100 hrs. @ 5% Neutral Salt Spray
Test Panel Coating Method		0.8 mil on grit blasted steel panel
Abrasion Resistance	ASTM D4060	Excellent
Coefficient of Friction	ASTM D2714	0.04 to 0.08
Operating Temperature Range (continuous)		-365° to 400°F (-221° to 204°C)
Load Carrying Capacity*	ASTM 2625, Method B	> 250,000 psi
Wear Life*	ASTM 2625, Method A	> 450 minutes
Pencil Hardness	ASTM D3363	>4H (gouge)
Thermal Stability	ASTM D2511	Pass
Film Adhesion	ASTM D2510 Method A	Pass

Chemical Resistance (ASTM D-2510, Method C)

Isopropyl Alcohol or Ethyl Alcohol	Pass	Diethanolamine	Pass
Mineral Spirits or Paint Thinner	Pass	Hydrochloric Acid (10%)	Pass
Toluene	Pass	Sodium Hydroxide (10%)	Pass
Acetone	Pass	Distilled Water	Pass
Skydrol 500	Pass	Jet Fuels (JP-4)	Pass
Hydraulic Fluids	Pass	Trichloroethylene:	Pass
Anti-Icing Fluids	Pass	Cleaning Compound	Pass
Trichlorofluoroethane	Pass	Reagent Water	Pass
Substitute Ocean Water	Pass		
Silicone Based Damping Fluid	Pass	Turbine Fuel	Pass
Low Temp Weapon Lube Oil	Pass	Aircraft Lube Oil	Pass
Weapons Lubricant, Cleaner & Preservative	Pass	Lubricant, Semi-Fluid	Pass

Note: Chemical resistance may vary depending on the cure cycle. N/R = Not recommended

Additional Information

Shelf Life and Storage:

One year from date of shipment, stored in a factory sealed container between the temperatures, 40°F to 100°F. Coatings are thermally stable, but we do not recommend prolonged exposure outside of the specified temperature range listed above.

Packaging:

Ecoalube 642 is available in Gallons, 5-gallon pails, Quarts

Warranty:

No representation of warranty is expressed or implied and all warranties including warranties of marketability and fitness for use are expressly disclaimed. Nothing herein shall be construed as permission or recommendation to practice a patented invention without a license.

* These tests are performed on each production lot

[1] Based on 100% transfer efficiency at a dry film thickness of 0.0005 inch (12.5 microns).

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