



UCON FLUIDS & LUBRICANTS

UCON EPML-483 Metalworking Lubricant

UCON™ EPML-483 metalworking lubricant is an anionic modified polyalkylene glycol which provides both hydrodynamic and extreme pressure lubrication. EPML-483 is completely water soluble at ambient temperatures. At elevated temperatures it exhibits inverse solubility and is thus able to provide excellent lubricity at low concentrations in water. When EPML-483 is compounded with alkanolamines, nonnitrite corrosion inhibitors, and biocides, synthetic coolants of exceptional performance and versatility can be produced. EPML-483 is stable in hard water and is naturally low foaming. It is hydrolytically stable and resists bacterial attack.

EPML-483 remains fluid to prevent the buildup of tacky or gummy residues. Unlike many synthetic extreme pressure additives, EPML-483 is not selectively depleted from coolant systems. Thus, when used in a fully formulated product and properly maintained, EPML-483 is capable of providing long-term, trouble-free service in recirculating central coolant systems.

FEATURES

- Provides Excellent Hydrodynamic and Extreme Pressure Lubricity
 - eliminates need for lubricity modifiers such as phosphate esters or fatty acids
 - allows heavy duty machining without the use of chlorine, sulfur, or phosphorous extreme pressure agents
- Compatible with Ethanolamines and most Amine-Based Additives
- Low Foam Tendency
- Unaffected by Hard Water
- Hydrolytically Stable
- Resists Microbial Attack
- Completely Water Soluble at Ambient Temperatures

TYPICAL PHYSICAL PROPERTIES

Form	Clear Liquid
Appearance	Straw-light to amber
Viscosity, 25°C	2000-3500 est
Acidity, MEQ/g	1.06-1.30
Acid Number, mg/g	59.5-72.9
Color, Gardner	0-5
Flash Point closed cup (ASTM D93) open cup (ASTM D92)	102°C (215°F) 252°C (485°F)
Specific Gravity, 20/20°C	1.083
Weight per Gallon, 20°C	9.011 lbs/gal

SUGGESTED STARTING FORMULATIONS

Cutting Fluid

UCON EPML-483 Metalworking Lubricant	10-15%
Nonnitrite Corrosion Inhibitor	10-20%
Triethanolamine	20-25%
Biocide	as recommended by manufacturer
Water	balance

dilute 10:1 - 50:1 depending on the severity of the operation

Grinding Fluid

UCON EPML-483 Metalworking Lubricant	5-10%
Nonnitrite Corrosion Inhibitor	10-15%
Triethanolamine	15-20%
Biocide	as recommended by manufacturer
Water	balance

dilute 10:1 - 50:1 depending on the severity of the operation

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ENVIRONMENTAL ACCEPTABILITY

EPML-483 is not expected to contain chlorine, sulfur, phosphorous, nitrite, or phenolic compounds. If EPML-483 is neutralized with amines, corrosion protection should be enhanced only with nonnitrite corrosion inhibitors.

PRODUCT STEWARDSHIP

Dow encourages its customers and potential users of UCON EPML-X metalworking lubricants to review their applications from the standpoint of human health and environmental aspects. To help ensure that UCON EPML-X metalworking fluid is not used in ways for which it is not intended or tested, Dow personnel will assist customers in dealing with environmental and product safety considerations. Dow literatures, including Safety Data Sheets, should be consulted prior to the use of UCON EPML-X metalworking fluid.

**The Dow Chemical Company
Midland, Michigan 48674 U.S.A.**

For further information, call...

In the United States and Canada: call 1-800-447-4369 • fax 1-989-832-1465

In Europe: call toll-free +800 3 694 6367 • +32 3 450 2240 • fax +32 3 450 2815

In Asia-Pacific: call +852 2879 7339 • fax +852 2827 5881

In other Global Areas: call 1-989-832-1556 • fax 1-989-832-1465

Or visit us at www.dow.com/polyglycols

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