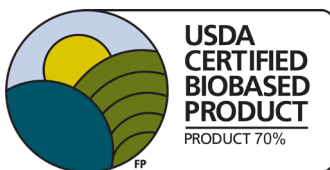


EcoLine® Metalworking Fluid



PRODUCT DESCRIPTION

EcoLine® Metalworking Fluid is formulated with biobased oil, additives, and emulsifiers and is an excellent replacement for chlorinated products. This product is designed to work in a variety of soft and hard water qualities and offers long-term protection for machine and components. Low maintenance and inherently stable, EcoLine® Metalworking Fluid is designed for machine shops where long service life, excellent machining performance, health, and environmental concerns are important factors for increased productivity. This multifunctional biodegradable product is supplied in concentrated form and requires mixing with water before use.

High-performance characteristics make EcoLine® Metalworking Fluid ideally suited for heavy-duty stamping, cutting, milling, turning, drilling, broaching, and other machining operations. Compared to conventional cutting fluids EcoLine® Metalworking Fluid has enhanced corrosion inhibiting and lubricity properties.

When added to water in the ratio of 1:20 to 1:10, EcoLine® Metalworking Fluid develops a stable emulsion which provides excellent cooling and little or no smoke during use. When used as directed, EcoLine® Metalworking Fluid prevents corrosion during in-plant processing, storage, and export shipment for up to 12 months.

FEATURES

- Environmentally friendly and biodegradable
- Replaces hazardous mineral oils
- Contains 70% biobased content (theoretical)
- Excellent for operations which require rapid cooling
- Contains no chlorinated compounds, chromates, or nitrites
- Low to no smoke or burning vapors
- Sustainable to bacteria growth
- Excellent anti-wear properties
- Excellent lubricity
- Excellent extreme pressure properties
- Cleans parts by removing rust and oil
- Provides excellent corrosion protection
- Displaces water and oil from metal surfaces
- Economical - can be diluted 1:20 with water

APPLICATION

Add EcoLine® Metalworking Fluid to water using a high dispersion-mixing blade. Mix for 5-10 minutes. The emulsion should remain stable indefinitely. In case of separation, emulsion can be remixed.

TYPICAL APPLICATIONS

- Lubricant for heavy-duty rolling, grinding, extruding, stamping, and cutting
- In-plant machining
- Biodegradable anticorrosion preservative for hot-rolled, cold-rolled, galvanized, and aluminized steel during operation, storage, and shipment
- Hydrostatic testing
- Machining coolant

TYPICAL PROPERTIES

Appearance	Slightly hazy brown liquid
Non-volatile Content	90-95%
pH	8.5-9.3 (1% aqueous)
Density	7.9-8.1 lb/gal (0.95-0.97 kg/l)



TEST RESULTS

ASTM D 1748 (Humidity Chamber)

Pass 900 hours (for 5% solution)

ASTM D 4627-86 (Cast Iron Chip Test)

Pass (1% solution)

ASTM D 4172 (Four Ball Wear Test)

Scar diameter (mm)

1 hour, 25°C, 1200 rpm, 40 kg

EcoLine® Metalworking Fluid (5% conc.) -0.60 mm

Conventional product (5% conc.) -0.66 mm

ASTM D 6425 (SRV4 Test, 5% conc, Coefficient of Friction and Wear Oscillating Modules)

Conditions: 40 minutes, 50 N, 50 Hz, 25°C, 1 mm ball on plate

Coefficient of Friction: min. 0.096; max. 0.118

STORAGE AND PACKAGING

EcoLine® Metalworking Fluid is packaged in 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk. The product should be stored sealed in the warehouse to avoid freezing. Agitate before each use. The shelf life of EcoLine® Metalworking Fluid is up to 24 months.

Note: Please see the Safety Data Sheet (SDS) for proper handling of the product.

FOR INDUSTRIAL USE ONLY
KEEP OUT OF REACH OF CHILDREN
KEEP CONTAINER TIGHTLY CLOSED
NOT FOR INTERNAL CONSUMPTION
CONSULT SAFETY DATA SHEET FOR MORE
INFORMATION

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