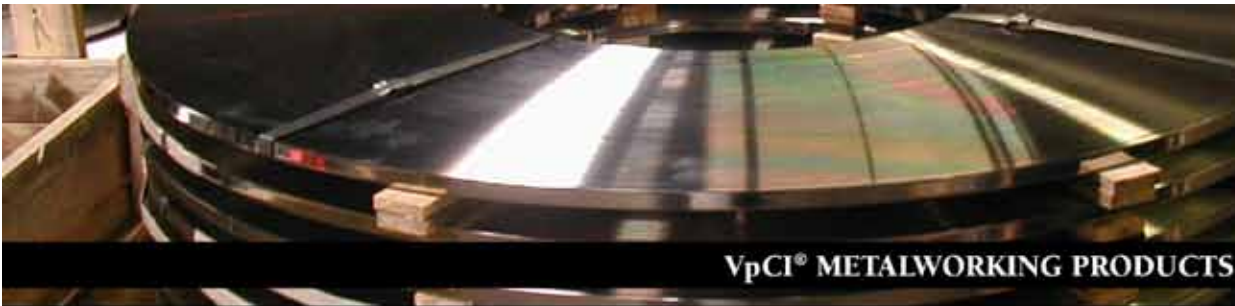




EcoLine® Cutting Fluid



PRODUCT DESCRIPTION

EcoLine Cutting Fluid is a multifunctional biodegradable concentrate for metal cutting operations. This liquid cools the work pieces and tools, prevents welding of metals during the metalworking process and provides excellent corrosion protection and lubrication during the cutting process.

High-performance characteristics make EcoLine Cutting Fluid ideally suited for heavy-duty cutting, milling, turning, drilling, broaching and other machining operations.

EcoLine Cutting Fluid is packaged in a pre-diluted "ready-to-use" 16 oz. bottle with squirt top application. EcoLine Cutting Fluid is also available in bulk concentrate, packaged in 5 gallon pails and 55 gallon drums. The EcoLine bulk concentrate can be diluted from 1:40 to 1:20.

When added to water in the ratio of 1:40 to 1:20, EcoLine Cutting Fluid gives a stable emulsion which provides excellent cooling and little or no smoke during use. This concentrated fluid can be used in small amounts providing cost savings. When used as directed, EcoLine Cutting Fluid prevents corrosion during in-plant processing, storage, and export shipment for up to 12 months.

EcoLine Cutting Fluid has been certified as a USDA certified biobased product and has been awarded USDA BioPreferredSM designated for Metalworking Fluids for Federal Preferred Purchasing (www.biopreferred.gov)

FEATURES

- USDA Certified BioBased product
- Contains 64% biobased content
- USDA BioPreferredSM designated Metalworking Fluid (general purpose and high performance) for Federal Preferred purchasing
- Environmentally friendly and biodegradable
- Replaces hazardous mineral oil

- Excellent for operations which require rapid cooling
- Contains no chlorinated compounds, chromates, or nitrites
- Low to no smoke or burning vapors
- 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 1:40 with water

APPLICATION

Add EcoLine Cutting 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 preservative for hot-rolled, cold-rolled, galvanized, and aluminized steel during operation, storage, and shipment
- Hydrostatic testing
- Machining coolant

TYPICAL PROPERTIES

Appearance	Clear amber liquid
Non-volatile Content	89-93%
pH	8.5-9.3 (1% aqueous)
Density	7.8-7.9 lb/gal (0.93-0.95 kg/l)



TEST RESULTS

ASTM D 1748 (Humidity Chamber)
Pass 220 hours (for 2.5% solution)
Pass 800 hours (for 5% solution)

ASTM D 4627-86 (Cast Iron Chip Test)
Pass (1% solution)

ASTM D 2670 (Falex Pin and VEE Block Wear Test)

Conditions:

Run in/5 min.	350 lb (159 kg)
Gage load/15 min.	900 lb (408 kg)

Results:

Total Teeth Wear	17 (2.5% solution)
10 (5% solution)	
Seizure (Yes/No)	No (2.5% solution)
No (5% solution)	

Tapping Torque Test

Specimen Type	1215 steel
Speed (high speed taps)	400 rpm

Conventional Cutting Fluid	6.257 (2.5%)
6.195 (5%)	
EcoLine Cutting Fluid	5.962 (2.5%)
5.814 (5)	

STORAGE AND PACKAGING

EcoLine Cutting Fluid is packaged in 16 oz. (455 ml) ready-to-use, 5 gallon (19 liter) pails concentrate, 55 gallon (208 liter) drums concentrate, liquid totes, and bulk. The product should be stored sealed. Agitate before each use. The shelf life of EcoLine Cutting Fluid is up to 24 months, it is freeze/thaw stable

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

LIMITED WARRANTY

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