Renewable Lubricants, Inc.

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STABILIZED™ by Renewable Lubricants

Bio-Metal Cool™ GP

General Purpose Water Emulsifiable Metal Working Fluid

"Biobased Lubricants that Perform Like Synthetics"

Bio-Metal Cool™ GP is a general-purpose biobased (BioPeferred[SM]) concentrate designed for high performance use on both ferrous and nonferrous metals. This technologically advanced formula contains environmentally friendly, biosynthetic components to allow performance in many metalworking applications. It provides excellent corrosion protection and is non-staining to aluminum and yellow metals. This biobased formulation is designed to offer good natural EP performance without the use of active sulfur and chlorinated EP additives making a more economical general-purpose type coolant (For heavier metal working applications that require additional EP, see Bio-Metal Cool™ HD). Performance is enhanced by use of the Stabilized* HOBS's, natural fatty acid composition, which provides cutting tool wetting and oiliness. The super high viscosity index of the Stabilized HOBS adds additional lubrication qualities to this high performance lubricant. The formulation is free of boron, dicyclohexylamine (DCHA), phosphorus, heavy metals, diethanolamine, secondary amines, secondary amide emulsifiers, nitrite corrosion inhibitors, phenolic biocides, and nonylphenol non-ionic surfactants. Solutions are white to off-white and stable in the hardest of waters. Bio-Metal Cool™ GP is formulated with a non-formaldehyde producing preservative to give long trouble-free service with a minimum of maintenance of its cleanliness.

Bio-Metal Cool™ GP is an ENVIRONMENTALLY RESPONSIBLE cutting oil that is formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable materials. The advantages are many: biodegradable, renewable, low toxicity, no hazardous volatile organic compounds (VOC), more fire resistant, safer, EPA and ISO 14000 compliant, reduces foreign oil, and helps secure the American Economy, OSHA and worker acceptance is high with biobased oils.

Application:
Bio-Metal Cool™ GP easily emulsifies in water with an ideal concentration range of 2.5% to 10%. At these levels, it is effective for grinding, milling, machining, drilling, threading and tapping of ferrous metals, ferrous alloys, stainless steel, aluminum, brass and bronze. At 3% dilution in DI water, Bio-Metal Cool™ HD has shown excellent performance in machining brass, bronze and aluminum. At 3% dilution in DI water, it has performed excellent in form tapping 304 Stainless Steel, and is recommended at 5% dilution as a heavy duty metal working fluid for machining steel. At levels of 5% or greater, it is effective as a temporary rust inhibitor for ferrous metals. Bio-Metal Cool™ GP may be used as a quenching agent for nuts, bolts, screws and similar products. Alkaline cleaners or vapor degreasing can easily remove any residual film.

Typical Dilution: Bio-Metal Cool™ GP : Water

Grinding & Milling	1:20 to 1:30
General Machining	1:20 to 1:30
Drilling	1:10 to 1:20
Threading & Tapping	1:10 to 1:20
Light Drawing & Stamping	1:5 to 1:10

Typical Data:
9.4 pH @ 5% by volume in water = 5.0 refractometer reading
5% dilution in 200 ppm hardness water (IP 125) No corrosion (0/0-0 results)
Falex Pin & V block: 45 ft. lbs. Torque at 4000 psi
Four ball wear test: (5% dilution) Avg. coefficient of friction 0.08 Scar diameter in mm 0.51

This product is formulated with a non-formaldehyde producing preservative to prevent bacteria and fungus growth. Consult RLI's technical service for additional biocides if tank side application is required.

STABILIZED by Renewable Lubricants* is RLI's trademark on their proprietary and patented anti-oxidant, anti-wear, and cold flow technology. High Oleic Base Stock (HOBS) are agricultural vegetable oils. This Stabilized technology allows the HOBS to perform as a high performance formula in high and low temperature applications, reducing oil thickening and deposits. Patented Product: US Patent 6,383,992, US Patent 6,534,454 with additional Pending and Foreign Patents

Availability	F.O.B.: Hartville, Ohio, USA	1 Gallon	5 Gallon Pail	Drum	Totes	Bulk
RLI Product Item #		86803	86804	86806	86807	86809