



Renewable Lubricants, Inc.

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Bio-Syntra™ LM 10, 15, & 22 Cutting/Honing Oils



"Biobased Lubricants that Perform Like Synthetics"

Bio-Syntra™ LM (light to medium) 10, 15, and 22 Cutting/Honing Oils are ultimately biodegradable¹, biobased lubricant designed for honing, lapping, and *light to medium* duty cutting, stamping, drawing, and rolling operations where lighter viscosity oils are required. They are non-staining to yellow metals and may be used for machining both ferrous and non-ferrous metal alloys. Performance is enhanced by use of the patented Stabilized™ HOBS's, natural fatty acid composition, which provides cutting tool wetting and oiliness; combined with excellent extreme pressure and antiwear technology. The super high viscosity index of the Stabilized HOBS adds additional load carrying and lubricity properties for many metal working applications. Applications may include: milling, drilling, turning, grinding, honing, broaching, thread cutting, and tapping (*match viscosity and EP performance below to equipment and application requirements*). Their color can be classified as transparent, which permits viewing the cutting operations while in process and it is formulated to reduce smoke and mist. These (Biopreferredsm.) products do not contain active sulfur, chlorine, zinc, phosphorus, silicon, or heavy metals, and do not produce an abrasive odor.

The performance and flexibility of these compatible products helps in reducing inventory and lowering cost. They provide the most advanced technology in today's metalworking.

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.

Bio-Syntra™ LM 10, 15, and 22 Cutting/Honing Oils are ENVIRONMENTALLY RESPONSIBLE products that are formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable materials.

Typical Specifications

| ISO Grades | 10 | 15 | 22 |
|-------------------------------------|--------------|--------------|--------------|
| VISCOSITIES: @ 100°C., cSt. | 3.2 | 4.2 | 5.3 |
| @40°C., cSt. | 9.9 | 14.9 | 20.4 |
| Viscosity Index | 220 | 214 | 214 |
| Flash Point, COC °C | 160 | 207 | 210 |
| Pour Point, °C | -5 | -9 | -10 |
| Copper Corrosion ASTM D-130 | 1B | 1B | 1B |
| Rust Prevention ASTM D-665 | No Rust | No Rust | No Rust |
| 4-Ball Wear ASTM D-4172 (mm) | .40 to .50 | .40 to .50 | .40 to .50 |
| 4-Ball EP Weld Pt. ASTM D-2783 (kg) | 400 | 400 | 400 |
| Product Item # | 88240 | 88250 | 86840 |

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.

¹ Ultimate Biodegradation (Pw1) within 28 days in ASTM D-5864 Aerobic Aquatic Biodegradation of Lubricants

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Availability F.O.B. :Hartville, Ohio, USA 1 Gallon 5 Gallon Pail Drum Totes Bulk