



# Renewable Lubricants, Inc.

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## **Bio-MultiPurpose™ Machining Oils ISO 32, 46, 68** (Hydraulic Fluid, Gear Oil, Cutting Oil, Machine Lube)



### *"Biobased Lubricants that Perform Like Synthetics"*

Bio-MultiPurpose™ Machining Oils are ultimately biodegradable<sup>1</sup>, biobased lubricants formulated with natural and synthetic base oils for light to medium-heavy duty machining operations. They provide protection in today's hi-tech machines operating at increased speeds and feed rates and their multipurpose performance helps in reducing inventory and lowering cost. Their color can be classified as transparent, which permits viewing the cutting operations while in process and they are formulated to reduce smoke and mist. Performance is enhanced by use of the \*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 lubrication qualities in industrial gear, hydraulic, and machine systems. They are non-staining to yellow metals and may be used for machining both ferrous and non-ferrous metal alloys. The products do not contain active sulfur, chlorine, zinc, silicon, or heavy metals, and do not produce an abrasive odor.

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-MultiPurpose™ oils are ENVIRONMENTALLY RESPONSIBLE lubricants that are formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable materials.

#### Typical Specifications

<u>ISO Grade</u>	<u>32</u>	<u>46</u>	<u>68</u>
Specific Gravity @60°F.	.90	.90	.90
VISCOSITIES: @100°C., cSt.	6.9	9.0	13.0
@40°C., cSt.	32.5	45.6	67.0
Viscosity Index	182	184	199
Flash Point, COC °C	230	238	240
Pour Point, °C	-20	-18	-18
Copper Corrosion ASTM D-130	1B	1B	1B
Rust Prevention ASTM D-665 A&B	No Rust	No Rust	No Rust
Foam Sequence I, II, III (10 min) ASTM D-892	0 Foam	0 Foam	0 Foam
Demulsibility ASTM D-1401	40/40/0	40/40/0	40/40/0
4-Ball Wear ASTM D-4172 (mm)	.40	.40	.40
4-Ball EP Weld Pt. ASTM D-2783 (kg)	400	400	400
Load Wear Index	53	58	66
FZG DIN 51354 Part 2	>12	>12	>12
RLI Product Item #	86933	86943	86953

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.

<sup>1</sup> Ultimate Biodegradation (Pw1) within 28 days in ASTM D-5864 Aerobic Aquatic Biodegradation of Lubricants  
 Patented Product: US Patent 6,383,992, US Patent 6,534,454 with additional Pending and Foreign Patents

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