



Renewable Lubricants, Inc.

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Bio-Syntra™, Bio-SynXtra™, and Bio-SynXtra™ LV

(Heavy and Extra Heavy Duty Metal Working/Machining Oils)



"Biobased Lubricants that Perform Like Synthetics"

Bio-Syntra™, Bio-SynXtra™ and Bio-SynXtra™ LV machining oils are ultimately biodegradable¹, biobased metal working oils formulated from natural and synthetic esters for heavy and extra heavy duty machining operations. 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 tool wetting and oiliness; combined with excellent extreme pressure (EP) and antiwear technology. The super high viscosity index of the Stabilized HOBS and synthetic base stocks adds additional load carrying properties and corrosion protection. They are non-staining to yellow metals and may be used for machining both ferrous and non-ferrous metal alloys. These operations include: stamping, drawing, milling, drilling, turning, grinding, honing, broaching, thread cutting, and tapping.

Bio-SynXtra™ LV is a low viscosity version of Bio-SynXtra™. Bio-Syntra™ provides less EP and is a lower cost product (match viscosities and EP performance below to equipment and application requirements). These (Biopreferredsm.) products do not contain active sulfur, chlorine, zinc, phosphorus, silicon, or heavy metals, and do not produce an abrasive odor. In addition, these oils are particularly useful for machining stainless and hard steel. The Bio-SynXtra™ 46 and Bio-SynXtra™ LV 22 provide the higher EP performance for machining harder materials, such as tool steels, Inconel, and Hastalloy.

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.

Typical Specifications

	Bio-Syntra <u>32</u>	Bio-SynXtra <u>46</u>	Bio-SynXtra LV <u>22</u>
VISCOSITIES: @100°C., cSt.	7.5	9.3	5.8
@40°C., cSt.	31.5	44.4	21.6
Viscosity Index	219	200	234
Flash Point, COC °C	209	230	190
Pour Point, °C	-23	-20	-18
Copper Corrosion ASTM D-130	1B	1B	1B
Rust Prevention ASTM D-665	No Rust	No Rust	No Rust
4-Ball EP Weld Pt. ASTM D-2783 (kg)	500	>800	>800
Taping (Relative Efficiency %) 4140 Steel	99.8		
1020 HR Steel		120	120
1018 Forming Steel		100	100
304 Stainless Steel		100	100
RLI Product Item #	86860	86870	86850

Bio-Syntra™ and Bio-SynXtra™ oils meet the Environmental Protection Agency (EPA) Vessel General Permit (VGP) guidelines for Environmentally Acceptable Lubricants (EALs), and should be used in applications where **LOW TOXICITY, BIODEGRADABILITY** and **NON-BIOACCUMULATION** properties are required. They exceed the acute toxicity (LC-50 / EC-50 >1000 ppm) criteria adopted by the US Fish and Wildlife Service and the US EPA. Bio-Syntra™ and Bio-SynXtra™ oils are **ENVIRONMENTALLY ACCEPTED LUBRICANTS** (EALs) that are formulated from renewable agricultural biobased resources. We believe Earth's environmental future rests in the use of renewable materials.

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

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, Patent 6,624,124, US Patent 6,620,772 with additional Pending and Foreign Patents. * Trademark of Renewable Lubricants, Inc. Copyright 1999 Renewable Lubricants, Inc.

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