



# Renewable Lubricants, Inc.

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## Bio-Pro™ Bar & Chain Oils



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

Bio-Pro™ Bar & Chain Oils are professional, ultimately biodegradable<sup>1</sup> biobased bar and chain oils. Bio-Pro™ Oils combines agricultural vegetable oils with patented additive technology to provide **high performance**, biodegradable lubricants. A high level of tackiness with anti-wear and extreme pressure additives prevent oil fling off from chains and sprockets reducing wear. It has been recognized by the EPA that the use of mineral lubricants poses certain environmental risks. Leakages, emissions and spillages, when handling petroleum lubricants, lead to direct pollution of the surroundings and the environment. Bio-Pro™ Oils were developed to ultimately biodegrade when lost into the environment.

Bio-Pro™ Oils are very tacky, tough, pitch dissolving lubricants that are recommended for chain saw bars and industrial chains and sprockets including those used in pulp and paper mills, saw mills, plywood mills, and general manufacturing. Other possible uses include chain drives on straddle lift lumber carriers, ATV and motorcycle chains, farm equipment, automatic and hand operated oilers.

#### Performance

*Professionals love the Performance of Bio-Pro™ Bar & Chain Oils*

A side-by-side comparison with conventional petroleum oil based bar & chain lubricants were performed. Testimonials have been reported from professional fire fighters cutting fire trails in New Mexico, that Bio-Pro™ SAE 15W50 has increased the bar and chain life 2 to 3 times over previous petroleum formulas. Bio-Pro™ reduces bar and chain maintenance and critical down time during fires.

#### Typical Specifications

|                                   | SAE 10W30 | SAE 15W50 | SAE 20W60 |
|-----------------------------------|-----------|-----------|-----------|
| Viscosity @ 40°C., cSt.           | 63        | 92        | 149       |
| Viscosity @100°C., cSt.           | 12        | 16.8      | 25.3      |
| Viscosity Index                   | 190       | 198       | 205       |
| Flash Point, °C. COC              | 242       | 270       | 282       |
| Pour Point, °C.                   | -39       | -30       | -26       |
| Brookfield Vis D-2983, cps @-25°C | 4,000     | 10,000    | --        |
| 4-Ball Wear (mm)                  | .40       | .40       | .40       |

Bio-Pro™ Oils meet the Environmental Protection Agency (EPA) 2013 Vessel General Permit (VGP) guidelines for Environmentally Acceptable Lubricants (EALs), and should be used where **LOW TOXICITY**, **BIODEGRADABILITY** and **NON-BIOACCUMULATION** properties are required. They exceeds the acute toxicity (LC-50 / EC-50 >1000 ppm) criteria adopted by the US Fish and Wildlife Service and the U.S. EPA. Bio-Pro™ Oils are **ENVIRONMENTALLY RESPONSIBLE** lubricants that are formulated from renewable agricultural biobased resources. We believe Earth's environmental future rests in the use of renewable materials.

#### **<sup>1</sup>Ultimate 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 with additional Pending and Foreign Patents

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| <u>Availability</u> | <u>F.O.B.: Hartville, Ohio, USA</u> | <u>1 Quart</u> | <u>1 Gal</u> | <u>5 Gal Pail</u> | <u>Drum</u> | <u>Totes</u> | <u>Bulk</u> |
|---------------------|-------------------------------------|----------------|--------------|-------------------|-------------|--------------|-------------|
| Item # 10W30        |                                     | 80601          | 80603        | 80604             | 80606       | 80607        | 80609       |
| Item # 15W50        |                                     | 80611          | 80613        | 80614             | 80616       | 80617        | 80619       |
| Item # 20W60        |                                     | 80621          | 80623        | 80624             | 80626       | 80627        | 80629       |