



## Renewable Lubricants, Inc.

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### Bio-Vacuum Pump™ Oil ISO 46, 68

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

Bio-Vacuum Pump™ Oil is an ultimately biodegradable<sup>1</sup> biosynthetic formula that is recommended in the dairy industry for automatic milking machines and most other vacuum pump applications. It provides protection in vacuum pumps that require Anti-Wear (AW), anti-rust, anti-oxidation, anti-foam, and demulsibility properties. Incorporating the super high viscosity index (VI) of the Stabilized\* High Oleic Base Stocks (HOBS) into the formula, increases the viscosity index past synthetic levels (Energy Conserving Formulas). The HOBS's extremely low volatility increases the flash and fire safety features in the formula and reduces oil volatility.

Bio-Vacuum Pump™ Oil 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. It exceeds the acute toxicity (LC-50 / EC-50 >1000 ppm) criteria adopted by the US Fish and Wildlife Service and the US EPA. Bio-Vacuum Pump™ Oil is an **ENVIRONMENTALLY RESPONSIBLE** lubricant that is 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

#### Typical Specifications

<u>SAE Grade</u>	<u>10W30</u>	<u>30</u>
ISO Grade	46	68
VISCOSITIES:		
@ 100°C., cSt.	9.67	11.2
@ 40°C., cSt.	43.8	62.8
Viscosity Index	216	189
Flash Point, COC, °C.	243	248°C
Fire Point, COC, °C.	268	270°C
Pour Point, °C.	-36	-30
Brookfield, @ -25°C., cP, (D-2983)	3,000	
MRV @ -30 °C, (TP-1)		8,000
Copper Corrosion Strip 3hr @ 100°C.	1B	1B
4 Ball Wear, 1h, 167°F, 1200 RPM, 40kg	0.3-0.4	0.4
Demulsibility (D-1401)	40/40/0	40/40/0
Foam Sequence I, II, III (D-892)	0	0
Rust Prevention, (D-665 A&B)	Pass	Pass
<u>Item#</u>	<u>84100</u>	<u>84110</u>

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

