



## Renewable Lubricants, Inc.

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### **Bio-Spindle™ Oil ISO 22**



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

Bio-Spindle™ Oil is an ultimate biodegradable vegetable based formula that replaces many mineral oil based spindle oils. Bio-Spindle™ Oil is formulated to perform in high speed, lightly loaded bearings that require both Anti-Wear, Rust, and Oxidation properties. It is highly inhibited against moisture and rusting in both fresh and sea water and passes both A and B Sequences of the ASTM D-665 Turbine Oil Rust Test.

Incorporating the super high viscosity index of the Stabilized High Oleic Base Stocks (HOBS) into the formula, gives multi-grade synthetic based oil performance by boosting the viscosity index to synthetic levels. Bio-Spindle Oil™ is designed to meet or exceed the ISO standard FC-22. A zinc-free additive system has also been developed that is environmentally friendly and meets the Anti-Wear requirements for high speed spindle bearings. Bio-Spindle Oil is an ENVIRONMENTALLY RESPONSIBLE product that is formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable materials.

#### **Typical Specifications**

<b>ISO Grade</b>	<b>22</b>
API Gravity @ 60°F.	31.9
Pounds/Gallon @ 60°F.	7.21
Specific Gravity @60°F.	.866
<b>VISCOSITIES:</b>	
@100° C., cSt.	4.9
@40° C., cSt.	20.40
Viscosity Index	176
Flash Point, COC, °C	220
Pour Point, °C	-25
Copper Corrosion Strip 3hr @ 100°C	1A
4 Ball Wear, 1h, 167°F, 1200 RPM, 40kg	.40
Hydrolytic Stability, (D-2619)	Pass
Foam Sequence I, II, III (D-892)	Pass
Rust Prevention, (D-665)	Pass
Rotary Bomb Oxidation, (min)	250

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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**Availability** **F.O.B. :Hartville, Ohio, USA**

**5 Gallon Pails** **Drums** **Bulk**