



## Renewable Lubricants, Inc.

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### **Bio-Ultimax™ 1200LT Hydraulic Fluids**

(ISO 15, 22, 32)



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

Bio-Ultimax™ 1200LT (Low Temperature) Hydraulic Fluids are ultimately biodegradable,<sup>1</sup> biobased formulas that were designed specifically to replace mineral oil based hydraulic fluids for environmentally sensitive and/or cold temperature areas. Bio-Ultimax™ 1200LT Hydraulic Fluids are formulated to perform in hydraulic systems that require anti-wear, anti-foam, anti-rust, anti-oxidation, and demulsibility properties. They are highly inhibited against moisture and rusting in both fresh and sea water and pass 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 base oil performance by boosting the viscosity index (VI) past synthetic levels (energy conserving formulas). This super high viscosity index of the HOBS naturally improves the thermal shear stability of the formula and increases load capacity. They provide additional fluid value at the higher temperatures, which is a performance benefit over lower VI products of the same ISO viscosity. The HOBS's extremely low volatility increases the flash and fire safety features in the formula compared to petroleum formulations with the same viscosity ranges. A zinc-free additive system has also been developed that is environmentally friendly and exceeds the load stage 10 in the FZG (DIN51354) requirements for low viscosity hydraulic and turbine oils. They may be used in reduction gears for cold temperature applications, where the OEM recommends a lighter viscosity or SAE 0W for proper channeling. Bio-Ultimax™ 1200LT Hydraulic Fluids are ENVIRONMENTALLY RESPONSIBLE products that are 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>15</b>	<b>22</b>	<b>32</b>
Specific Gravity @ 60°F.	.856	.865	.876
VISCOSITIES (ASTM D-445):			
@ 100° C., cSt.	3.8	4.8	6.3
@ 40° C., cSt.	15.8	22.2	31.9
@ -15° C., cSt.	250	375	550
Viscosity Index (ASTM D2270)	135	142	152
Low Temperature Stability (ASTM D-6351)	Pass	Pass	Pass
Flash Point, COC, °C (ASTM D-92)	185	201	230
Pour Point, °C (ASTM D-97)	-60	-54	-50
Acid Number (ASTM D-664)	0.4	0.4	0.4
Copper Corrosion (ASTM D-665)	1A	1A	1A
4 Ball Wear (ASTM D4172)			
1h, 167°F, 1200 RPM, 40kg	.40	.40	.40
Demulsibility (ASTM D-1401)	40/40/0	40/40/0	40/40/0
Foam Sequence I, II, III (ASTM D-892)	0	0	0
Rust Prevention A&B, (ASTM D-665)	Pass	Pass	Pass
Rotary Bomb Oxidation (ASTM D-2272) (Minutes)	450	450	450
Oxidation Stability (ASTM D-6186)			
PDSC minutes @ 180°C	25	25	25
PDSC minutes @ 165°C	95	95	90
Seal Swell FTM- 791-3603 NBR-L %	10	8	8
<b>RLI Product Item #</b>	<b>81310</b>	<b>81320</b>	<b>81330</b>

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 PwI >60% 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**