



# Renewable Lubricants, Inc.

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## Bio-Assembly™ Oils (ISO- 7, 15, 22, 32, 46, 68, 100, 150, 220)



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

Bio-Assembly™ Oils are specially formulated vegetable based oils (Biobased) that replace neutral petroleum oils in industrial assembly, light general purpose metal working and rolling applications. Their natural oiliness provides excellent lubricity in assembly, rolling, stamping, piercing, and fabricating of softer metal and rubber parts that do not require anti-wear and E.P. additives. These ultimate biodegradable<sup>1</sup> products provide low odor and are highly accepted where additive free neutral base oils and material compatibility are desired. They are compatible with most elastomers, seals materials and components that are designed to operate on mineral oils and have been Stabilized\* to resist oxidation and provide excellent light color stability. As neutral neat oils, they are aromatic, chlorine, and sulfur free.

**Applications:** Bio-Assembly™ Oils have shown to provide the proper oiliness and fluid film necessary for many applications including: pre-lube, rubber to metal contact in shooter assembly, drilling /cutting rubber parts and de-flashing molded rubber, metal to metal contact in stamping assembly, fin and thin gage stamping and aluminum rolling. They provide improved drilling, tapping, and cutting of hard to work with soft aluminum and prevents the material from sticking to the tool. These oils provide in-house, short term corrosion protection for metal parts and they are non-staining to aluminum and yellow metals.

For harder metals, Bio-Boost™ Lube Concentrate booster pak can be added to improve Anti-Wear/Extreme Pressure performance. *(Use Proper Viscosity Sufficient for Application)*

Bio-Assembly™ Oils are ENVIRONMENTALLY RESPONSIBLE lubricants that are formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable material.

The advantages are many: biodegradable, renewable, low toxicity, no volatile organic compounds (VOCs), safer, more fire resistant, 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

ASTM Grade (Neutral Oil)	50N	75N	105N	150N	215N	315N	465N	700N	1000N
<b>ISO Grade</b>	<b>7</b>	<b>15</b>	<b>22</b>	<b>32</b>	<b>46</b>	<b>68</b>	<b>100</b>	<b>150</b>	<b>220</b>
API Gravity @ 60°F. (D-287)	29.3	27.5	27.5	25.7	25.7	25.7	25.7	25.7	25.7
Pounds/Gallon @ 60°F.	7.32	7.40	7.44	7.49	7.48	7.48	7.47	7.47	7.46
Spec. Gravity @ 60°F. (D-287)	.88	.89	.89	.90	.90	.90	.90	.90	.90
VISCOSITIES:									
@ 100°C., cSt. (D-445)	2.46	4.17	5.30	7.18	9.74	12.89	18.04	25.26	34.06
@ 40°C., cSt. (D-445)	7.07	14.71	20.52	31.28	45.67	64.95	99.13	151.29	220.30
Viscosity Index (D-2270)	207	226	212	205	206	203	202	202	202
Flash Point, COC, °C (D-92)	180	200	270	280	280	280	280	280	280
Pour Point, °C (D-97)	-5	-10	-15	-20	-20	-20	-20	-20	-20
*Stabilized-Oxidation Inhibited	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>RLI Product Item #</b>	<b>84400</b>	<b>84410</b>	<b>84420</b>	<b>84430</b>	<b>84440</b>	<b>84450</b>	<b>84460</b>	<b>84470</b>	<b>84480</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 (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, US 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   Totes   Bulk**