



Renewable Lubricants, Inc.

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Bio-Gearhead™ Oils



"Biobased Lubricants that Perform Like Synthetics"

A Gearhead is the laymen's language for the right angle gear drive commonly used to reduce the speed of an irrigation engine to drive water well turbine pumps. Baldor-Dodge Gear Motors and Boston Speed Reducers are examples of OEM manufacturers that produce gear drive units. These gear sets do not require Hypoid level of EP and because of this, the lubricant most commonly specified by makers of these gear reducers is an R & O circulating or low ash GL-3 type oil in SAE 30 or higher viscosity. This formula has combined Stabilized technology with HOBS and mild EP/antiwear additives. The result is an ultimately biodegradable¹ product which has the long-life heat stability, but which additionally offers the protection advantages of the mild EP and antiwear of an API "GL-3" type gear lube.

Typical Specifications

<u>SAE Gear Oil Viscosity</u>	<u>75W80</u>	<u>80W90</u>
<u>AGMA Gear OIL Number</u>	<u>1</u>	<u>3</u>
<u>SAE Engine Oil Viscosity</u>	<u>5W30</u>	<u>15W50</u>
VISCOSITIES:		
@100°C., cSt. (D-445)	9.75	17.1
@40°C., cSt. (D-445)	43.17	94.0
Viscosity Index (D-2270)	201	199
Flash Point, COC, °C (D-92)	243	255
Pour Point, °C (D-97)	-41	-34
Copper Corrosion Strip 3hr @ 100°C (D-130)	1A	1A
4 Ball Wear, 1h, 167°F, 1200 RPM, 40kg (D-4172)	.40	.40
FZG Test (DIN 51354)	12	12
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
RLI Product Item #	82000	82010

Features

- (1) API Service Classifications GL-1, GL-2, GL-3
- (2) Super high viscosity index and low pour point for wide temperature usage
- (3) Fortified with additives to resist wear, oxidation, rust and foam

Bio-Gearhead™ 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 exceed the acute toxicity (LC-50 / EC-50 >1000 ppm) criteria adopted by the US Fish and Wildlife Service and the US EPA. Bio-Gearhead™ 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.

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