



# Renewable Lubricants, Inc.

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## Bio-E.P.™ Wire Rope Lubricants

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

Bio-E.P.™ Wire Rope Lubricants are ultimately biodegradable<sup>1</sup> vegetable oils formulated with antiwear, extreme pressure (EP), anti-rust, oxidation inhibitors, and a tackifier. They provide a light waxy-tacky coating, and are recommended for lubricating multi-strand cables and wire rope wound around central cores of steel or fiber, which are subject to heavy loading and/or shock loading. These biobased products provide improved fire resistance over equal viscosity petroleum products and contain no chlorine, zinc, or heavy metals. Performance is enhanced by use of the Stabilized HOBS's natural vegetable oil composition, which provides an oily boundary film. In addition, this oily film has a natural polarity to metal surfaces and helps clean and then penetrates deep into the inner core of the cable preventing rust and wear. The super high viscosity index of the Stabilized HOBS adds additional lubrication qualities to this high performance lubricant. Laboratory and field tests have shown that the products provide exceptional protection with excellent low temperature pumpability.

**Applications:** Bio-E.P.™ Wire Rope Lubricants are specifically designed to provide high anti-wear, EP, and anti-rust protection. They provide a water displacing, corrosion inhibiting waxy film that is especially effective in protecting ferrous metals in salt and acid fume (hydrochloric acid) environments and against high humidity. They protect steel cables, pulleys, sliding surfaces, and threads against damage from corrosion, galling or seizure. Other applications including: steel chains, slideways, and hinge pins. Field applications can be applied by spray, brush, dip, drip or pressure boot. **(Can be applied without heating, but warming to 30 to 40°C prior to use will provide faster penetration into strands. Because of the waxes, slight agitation may be needed after months in storage).**

Bio-E.P.™ Wire Rope Lubricants 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-E.P.™ Wire Rope Lubricants are **ENVIRONMENTALLY RESPONSIBLE** lubricants that are 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

	ASTM	Light 10W20	Medium 10W30	Heavy Medium 15W40	Heavy 15W50	Extreme Heavy 20W60
SAE Viscosity Grade Replacement						
ISO Viscosity Grade		32	46	68	100	150
VISCOSITIES:	D-445					
@100°C., cSt.		7.5	10.3	13.4	17.9	24.5
@40°C., cSt.		31.8	45.8	67.2	94.2	137.3
Viscosity Index	D-2270	216	222	206	210	212
Flash Point, COC, °C	D-92	224	230	272	278	282
Pour Point, °C	D-97	-32	-32	-30	-28	-23
4-Ball Wear (mm)	D-4172	0.40	0.35	0.35	0.35	0.35
4-Ball EP	D-2783					
Weld Point (kg)		400	400	450	450	450
Load Wear Index		47	55	58	58	58
Timken Load, OK Load (lbs)	D-2782	65	70	70	70	70
Rust Prevention						
A-Distilled water	D-665A	Pass	Pass	Pass	Pass	Pass
B-Syn. Sea water	D-665B	Pass	Pass	Pass	Pass	Pass
Cabinet Humidity	D-1748	>60 days	>60 days	>60 days	>60 days	>60 days
Salt Fog Corrosion	B-117	>60 hrs.	>60 hrs.	>60 hrs.	>60 hrs.	>60 hrs.
<b>RLI Product Item #</b>		<b>82610</b>	<b>82620</b>	<b>82650</b>	<b>82630</b>	<b>82640</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. 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 1 Gallon 5 Gallon Pail Drum Totes**