



Renewable Lubricants™, Inc.

476 Griggy Rd., P.O. Box 474
 Hartville, Ohio 44632-0474
 Voice: 330.877.9982 Fax 330.877.2266
 Web: www.renewablelube.com

Bio-Penetrating Lubricant™ (BPL™)



"Biobased Lubricants that Perform Like Synthetics"

BPL™ is a multi-functional biobased penetrating lubricant. It is specially formulated to be an ultimately biodegradable¹ penetrant that can be used as a light lubricant. Because of the super high viscosity index of the HOBS, this product performs in many applications. BPL™'s patented composition of additives and base fluids provides a protective, thin film lubricant. This natural oily film has shown in laboratory and field tests to outperform petroleum base oils in terms of natural lubricity.

BPL™ is formulated to penetrate into close tolerant areas, then lubricate, and prevent corrosion. BPL™'s ability to creep is demonstrated by placing a $\frac{3}{8}$ " x 2" bolt on its head with $\frac{1}{4}$ " of BPL™ in the bottom of a lab beaker; BPL™ creeps vertically up the threads. It protects deep into the core of a cable or chain link and is excellent as a light air tool lubricant and preservative oil for parts. BPL™ contains no VOCs, displaces moisture, and provides a high dielectric (47 kV ASTM D-877) insulating property in electrical equipment. BPL™ has exceptional benefits over petroleum oils in these applications because there is direct danger of polluting the water, soil, or work environment through loss of the petroleum lubricant.

Applications - Military - Industrial - Transportation - Marine - Agricultural

Tools	Machine Tools	Bearings	Bolts
Jacks	Assembly Parts	Wire ropes	Chains
Dies	Shafts	Hinges	Firearms
Locks	Linkage Cables	Air Valves	Air Tools

Typical Data

Specific Gravity @60°F.	ASTM D-287	.87
Viscosity @40°C., cSt.	ASTM D-445	13.0
Flash Point, PMCC	ASTM D-93	295°F (146°C)
Pour Point (Rotational)	ASTM D-5985	-30°C
Four Ball Wear	ASTM D-2266	0.40 mm
Copper Corrosion Prevention	ASTM D-130	1A
Rust Prevention	ASTM D-665 A&B	Pass-Clean

BPL™ meets 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-BIOACUMMULATION** properties are required. BPL™ exceeds the acute toxicity (LC-50 / EC-50 >1000 ppm) criteria adopted by the US Fish and Wildlife Service and the U.S. EPA. BPL™ is an **ENVIRONMENTALLY RESPONSIBLE** lubricant that is formulated from renewable agricultural biobased resources. We believe Earth's environmental future rests in the use of renewable materials.

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, 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.

(See Page 2 for complete BPL Product Line)

Bio-Penetrating Lubricant™ (BPL™) Products Line Page 2

BPL™ is a product that everyone needs. It performs as a penetrant, but best of all, it is a multifunctional product. BPL™ is an excellent lubricant as shown in, ASTM D-2266 4 ball wear test 0.40 mm scar wear, and passes clean (no rust) on ASTM D-665 both A and B corrosion tests. BPL™ product applications include corrosion inhibitor/preservative oil for outside applications or in the inner plant production work area for protecting parts. Because it lubricates, it can be used for metalworking, fabricating, assembly oils, and to protect dies and molds from corrosion and wear. Another area includes chain and cable lubrication, it penetrates deep into the inner core of the cable or chain link, preventing rust and wear. It has the right formulation to be an excellent, light air tool oil and spindle oil for high speeds. BPL™ can be used to protect guns and tools (passes both fresh water and salt water corrosion protection, A and B Sequences of the ASTM D-665 Turbine Oil Rust Test) and it tested excellent on yellow metals (passes copper strip corrosion ASTM D-130 test 1A). The advantages are many: biodegradable, renewable, low toxicity, environmentally non-toxic, contains no hazardous Volatile Organic Compounds (VOCs), safer, helps secure the American Economy, reduces our dependence on foreign oils, and multi-performance. EPA, OSHA, and Workers Acceptance is high with Biobased Products.

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

<u>11 oz Aerosol Spray Can BPL</u>	<u>12oz. Spray</u>	<u>1 Gallon</u>	<u>5 Gallon Pail</u>	<u>Drum</u>	<u>Totes</u>	<u>Bulk</u>
Item # 80002	80001	80003	80004	80006	80007	80009

Renewable Lubricants offers many additional BPL™ products to meet your needs:

BPL™ Plus Moly + Tack (Chain & Cable Lubricant)

BPL™ Plus Moly with Tackifier has performance advantages in some applications such as high speed roller chains, cables, and moving parts. This product penetrates rapidly and adheres to the application, forming a lubricating film that cannot be wiped away by extreme pressures and high speeds. It protects metal surfaces from corrosion that are exposed to environmental conditions. The molybdenum disulfide (Moly) provides an extreme pressure lubricant that reduces friction and wear.

<u>Availability F.O.B.: Hartville, Ohio, USA</u>	<u>12oz. Spray</u>	<u>1 Gallon</u>	<u>5 Gallon Pail</u>	<u>Drum</u>	<u>Totes</u>	<u>Bulk</u>
Item #	80301	80303	80304	80306	80307	80309

BPL™ Plus Moly (Chain & Cable Lubricant)

A specially formulated, Biobased, Penetrating Lubricant that provides a protective Moly film to sliding surfaces, but is more resistant to dust and dirt than the BPL™ products with tackifier.

<u>Availability F.O.B.: Hartville, Ohio, USA</u>	<u>12oz. Spray</u>	<u>1 Gallon</u>	<u>5 Gallon Pail</u>	<u>Drum</u>	<u>Totes</u>	<u>Bulk</u>
Item #	80101	80103	80104	80106	80107	80109

BPL™ Food Grade H1 (see data sheet for BPL™ Food Grade H1)

BPL™ Food Grade is a multifunctional antiwear penetrant, that provides the same performance benefits as standard BPL™, but it is specially formulated and packaged for use as a food grade lubricant.

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

<u>11 oz Aerosol Spray Can BPL</u>	<u>12oz. Spray</u>	<u>1 Gallon</u>	<u>5 Gallon Pail</u>	<u>Drum</u>	<u>Totes</u>	<u>Bulk</u>
Item # 87002	87001	87003	87004	87006	87007	87009

BPL™ Plus Tack (Food Grade H1 Lubricant & Corrosion Inhibitor)

The addition of a food grade tackifier provides adhesiveness to the performance of BPL™ Food Grade. Some applications and environmental conditions may require an additional tacky surface film that protects equipment from corrosion. The tackifier added to BPL™ Food Grade helps meet this requirement and also holds the lubricant to the surface of moving parts and improves anti-wear.

<u>Availability F.O.B.: Hartville, Ohio, USA</u>	<u>12oz. Spray</u>	<u>1 Gallon</u>	<u>5 Gallon Pail</u>	<u>Drum</u>	<u>Totes</u>	<u>Bulk</u>
Item #	80201	80203	80204	80206	80207	80209

BPL™ Tacky White (Food Grade) H1

A specially formulated, biodegradable, biobased penetrant that can be used as a light tacky, solid film lubricant in food processing equipment and is essentially odorless and tasteless. Incorporating the white graphite provides a solid film extreme pressure lubricant that reduces friction and wear on sliding surfaces.

<u>Availability F.O.B.: Hartville, Ohio, USA</u>	<u>12oz. Spray</u>	<u>1 Gallon</u>	<u>5 Gallon Pail</u>	<u>Drum</u>	<u>Totes</u>	<u>Bulk</u>
Item #	87071	87073	87074	87076	87077	87079

Replace your WD-40, LPS, CRC and other Hazardous penetrants with BPL™