



# Renewable Lubricants, Inc.

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## **Bio-Power™**

### **Bio-Based Summer Diesel Fuel Conditioner**



Bio-Power™ is a biobased diesel fuel conditioner formulated to improve fuel economy and power, and overcome the known problems associated with today's fuel and newer emission control systems. Driven by global emissions and fuel economy regulations, new vehicles with the latest diesel engine designs using advanced injector technologies (such as Euro-5 and Euro-6 type in Europe and US2007 and US2010 in North America) continue to increase. Bio-Power™ provides approved EPA standards for world class "Premium Diesel" injector cleanliness, lubricity, and stability (EPA registration #21482001 per 40 CFR 70.23). This multifunctional fuel conditioner has been proven to eliminate and prevent both conventional nozzle deposits and internal diesel injector deposits (IDID) in today's most complex Tier 3 and Tier 4 engines using high pressure common rail (HPCR) and other injection systems. When used at the recommended treat rate in untreated fuel, Bio-Power™ helps both standard diesel and biodiesel fuel blends meet and exceed the National Conference on Weights & Measurements (NCWM), Engine Manufacturer's Association (EMA), Truck Maintenance Council (TMC), and other North American and Europe industry test specifications including:

- Outstanding performance in modern Peugeot DW10 injector cleanliness
- Superior rating level in standard Peugeot CEC XUD-9 injector cleanliness
- Superior Lubricity in ASTM D-975 specified maximum 520 microns wear scar diameter by HFRR
- Outstanding Lubricity in EN590 specified maximum 460 microns wear scar diameter by HFRR
- Improved Cleanliness over legacy Injector Depositing Test Detergency (Reference SAE Paper No. 912331)
- Excellent Fuel Stability using the 180 minute, 302°F oxidation test (NCWM and ASTM accepted)
- Superior lubricity (ASTM D-6078 Scuffing/Load BOCLE and ASTM D 6079 HFRR)
- Superior Corrosion Protection ASTM D-665A procedure
- Improved Water Tolerance ASTM D-1094

Based on multiple fleet trials and Injector Deposit Tests, Bio-Power™ shows significant improvements over untreated fuels in fuel economy, exhaust opacity (black smoke reduction), and engine noise. Cleanliness and lubricity performance help to maintain engines in "like new" condition which maintains power, minimizes crankcase oil dilution, and supplements upper cylinders and valve train with anti-wear protection.

### **For: Railway, Marine, Stationary Equipment, Transportation, and Passenger Vehicle Diesel Engines**

Fleet tested in Direct and Indirect Injection Vehicles to show the following impressive results:

- Three times more effective injector cleanliness provided in legacy Cummins L10 test
- **Improves fuel economy (up to 13.6%) and horsepower (up to 5.6%)**
- **Reduces exhaust emissions (up to 42% less black smoke) and reduces NOx**
- Offers exceptional lubricity for reduced fuel system wear
- Enhances fuel stability in equipment and storage
- Reduces water entrainment & prevents varnish and sludge formation in fuel & fuel filter system
- Proven performance in mineral-biodiesel blends

There are clear and measurable advantages to incorporating this multi-functional, biobased diesel fuel conditioner into diesel fuel. The end user of Bio-Power™ treated fuel will appreciate the differences of improved drivability, reduced combustion noise, longer component life, and reduced operating costs.

#### **Directions (Highly Concentrated):**

Ultra Performance for DW10 and internal diesel injector deposits (IDID) Clean-Up – 1 gallon per 1000 gallons of fuel

Maintenance Performance for DW10 and internal diesel injector deposits (IDID) Keep Clean – 1 gallon per 1500 gallons of fuel

Performance for Standard XUD-9 Injector Clean-Up – 1 gallon per 1500 gallons of fuel

Maintenance Performance for Standard XUD-9 Injector Keep Clean – 1 gallon per 3000 gallons of fuel

For best compatibility, add to diesel fuel before diesel fuel reaches its cloud point and store Bio-Power™ above 32°F before use.

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. Proprietary Formula

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<b><u>Availability</u></b>	<b><u>F.O.B.: Hartville, Ohio, USA</u></b>	<b><u>Quart</u></b>	<b><u>1 Gallon</u></b>	<b><u>5 Gallon Pail</u></b>	<b><u>Drum</u></b>	<b><u>Totes</u></b>	<b><u>Bulk</u></b>
Item #		80401	80403	80404	80406	80407	80409