



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-SynXtra™ Marine 4 Cycle Engine Oil

(High performance Water and Air cooled 4 cycle engine oil)

STABILIZED™
by Renewable Lubricants

"Biobased Lubricants that Perform Like Synthetics"

Bio-SynXtra™ Marine 4 Stroke Cycle Engine Oils are High-Performance full synthetic formulas, that are formulated with synthetic biodegradable¹, bio-base oils to meet and exceeds the EPA-VGP requirements, and the additive technology meets and exceeds the National Marine Manufacturers Association (NMMA) requirements for FC-W and FC- (Catalyst Compatible) Water-Cooled and Air-Cooled high output High-Performance 4 Cycle Outboard Engines. This proprietary additive technology has been boosted with specially formulated API SM heritage rust and corrosion inhibitors to meet the unique rust, anti-wear, and cleanliness performance requirements associated with the NMMA FC-W and FC-W (Catalyst Compatible) specifications. In addition, this technology meets the JASO MA (T903-2011 and T902006). This high performance 4-Cycle formula provides additional antiwear/anti-scuffing protection and is recommended for use in ATV and PWC engine applications. FC-W and FC-W (Catalyst Compatible) **are registered trademark / specification of the NMMA.**

Features and Benefits:

*Biodegradable¹, Full Synthetic base oils for Higher performance, ATV and PWC applications-Low toxic-renewable-sustainable

- Field Tested and proven additive Technology to meet and exceed NMMA FC-W and FC- (Catalyst Compatible) Water Cooled and Air-Cooled high output High-Performance 4 Cycle Outboard Engines.
- Specifically formulated to reduce emissions, visible smoke, minimizing deposits and carbon buildup.
- Reduces ring sticking and spark plug fouling.
- Field Tested in outboard, ATV and PWC applications.
- Strong wear control formulation boosted to maximize corrosion protection.
- Controls high temperature deposit formation in air cooled engines with limited air flow.
- Superior deposit control and cleanliness performance provides maximum engine durability.
- Enhanced lubricity performance, water stability and choice of viscosity for seasonal use.
- Keeps engine clean and maximizes performance.
- Excellent oxidation stability.
- Formulated for current and next generation low emission hardware.
- Super high viscosity index is key to reduced fuel dilution, reduced wear, and improved fuel economy.
- Proven in major OEM engines under extensive testing cycles and extreme conditions.

Bio-SynXtra™ Marine 4 Stroke Cycle Engine Oils meet the EPA 2013 VGP definition for EALs, and should be used in ATV and PWC engine 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-SynXtra™ Marine 4 Stroke Cycle Engine Oils are **ENVIRONMENTALLY ACCEPTED LUBRICANTS (EALs)** that are formulated from renewable biobased resources. We believe Earth's environmental future rests in the use of renewable materials.

¹Ultimate/Readily Biodegradation Pw1 biodegradable >60% within 28 days in OECD 301B and ASTM D-5864 Aerobic Aquatic

| TYPICAL SPECIFICATIONS | METHOD | SAE 10W30 | SAE 10W40 | SAE 20W40 | SAE 25W50 |
|---|-------------|-----------|-----------|-----------|-----------|
| Viscosity @ 100°C | ASTM D-445 | 11.0 | 15.5 | 15.2. | 18.0 |
| Viscosity @ 40°C | ASTM D-445 | 67.0 | 82.0 | 90.0 | 112 |
| Viscosity Index | ASTM D-2270 | 187 | 170 | 179 | 179 |
| Flash Point (COC) | ASTM D-92 | 235°C | 238°C | 240°C | 250°C |
| Pour Point °C | ASTM D-97 | -40 | -40 | -40 | -30 |
| CCS @ -25°C, cp | ASTM-D-5293 | <6,000 | 5500 | <6000 | 9500 |
| MRV-TP1 @ -30°C, cP | ASTM-D-4684 | 13,000 | 10000 | 13000 | 26000 |
| Yield Stress, Pa | | None | None | None | None |
| HTHS @ 150° C, Apparent Viscosity, cP | ASTM-D-4683 | 3.6 | 3.0 | >4.5 | >3.7 |
| NOACK Volatility % max 1h at 250°C | NOACK | 8.0 | 4.0 | 6.0 | 5.0 |
| RLI Product Item # | | 85853 | 85853 | 85863 | 85873 |

Biodegradation of Lubricants

™ Trademark of Renewable Lubricants, Inc. Copyright 1999 Renewable Lubricants, Inc.

Following are some of the organizations and companies using RLI's Bio-Engine / Hydraulic Fluids successfully:

Many USDA Facilities
 U.S. Coast Guard
 U.S. Army
 U.S. Air Force
 National Aeronautics and Space Administration (NASA)
 Pictured Rocks National Lakeshore
 Sleepy Hollow State Park
 Point Reyes National Seashore
 Cape Cod National Seashore
 Atkinson Contractors
 Mark Thomas Racing
 Volunteer Chevy
 NOAA and the Great Lakes Region
 Portage Area Regional Transit Authority (PARTA)
 US EPA Lake Guardian Research Vessel
 BMW Oracle Racing Team
 Neil LaRose 4 Yr. Champion Power Boat Racing