



# 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](http://www.renewablelube.com)

## Bio-TC™-W 2-Cycle Engine Oil



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

Renewable Lubricant's (RLI) 2-Cycle Engine Oil is a readily biodegradable<sup>1</sup> formula with proven technology that has passed the National Marine Manufacturers Association (NMMA) Certification Test TC-W (BIA) and TC-WII for 2-Cycle Engine Oil. This **Low-Smoke Formula** contains Stabilized Technology to improve fuel stability.

RLI's 2-Cycle Engine Oil has been especially designed to operate in water-cooled gasoline engines for the boating industry, and in 2-cycle air-cooled engines for general-purpose equipment and for personal and recreational transportation, such as motorcycles, snowmobiles, chain saws, and lawn and garden equipment. RLI's 2-Cycle Engine Oil meets and exceeds Motorcycle API TC and Husqvarna Chain Saw requirements.

RLI's 2-Cycle Engine Oil does not utilize a solvent to increase gasoline miscibility. This feature offers a significant safety advantage since the product has a flash point of 365<sup>0</sup>F and is, therefore, not classified as flammable or combustible according to OSHA or D.O.T. regulations. RLI's 2-Cycle Engine Oil is readily biodegradable and has the potential of one product servicing both water-cooled and air-cooled 2-cycle engines.

#### Typical Characteristics

Property	Typical Value	Method
Viscosity, cSt 100 <sup>0</sup> C	10.4	ASTM D-445
Viscosity, cSt 40 <sup>0</sup> C	63	ASTM D-445
Viscosity Index	155	ASTM D-2270
Flash point, <sup>0</sup> C	185	ASTM D-93
TBN (mg KOH/gm)	2.94	ASTM D-2896

#### Bench Tests

Low Temperature Fluidity	Pass
Compatibility with Mineral Oil	Pass
Filterability	Pass
Fuel Miscibility	Pass
Rust	Pass
Biodegradability: CEC-L-33-A-94	(84%)

#### Engine Tests

TC-W2 Johnson 40 hp	
Varnish	8.7/6.2/Pass
Ring Stick	9.0/7.8/Pass
Yamaha CE50S	
Lubricity (>Ref.)	4.75/6.26
West Bend Deposit	
Piston Varnish	9.7
Ring Stick	8.8
Port Blocking (%)	4

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.

<sup>1</sup> Readily Biodegradable >80% within 21 days in CEC L-33-T-82 test.

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**    **5 Gallon Pails**    **Drums**    **Bulk**