Renewable Lubricants, Inc.
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Bio-SynXtra Stern Tube Lube

(ISO 68, 100, 150, 220)

Bio-SynXtra™ Stern Tube Lubes are high-performance, biosynthetic lubricants designed for stern tube bearings, retractable fin stabilizers, and controllable pitch propeller systems in marine vessels. These readily biodegradable fluids provide exceptional lubricity, emulsification, and protection under high moisture and shock load conditions. Formulated with proprietary Stabilized™ biosynthetic base oils, they offer high viscosity index, corrosion inhibition, and enhanced seal compatibility. These fluids meet EPA 2013 Vessel General Permit (VGP) standards for Environmentally Acceptable Lubricants (EALs) and exceed major marine OEM requirements for stern tube lubrication.

Benefits

- Readily biodegradable, environmentally non-toxic, not bioaccumulative
- Maintains thick, stable emulsion with up to 20% seawater exposure (ASTM D-1401)
- Excellent anti-wear, anti-oxidation, anti-rust, and anti-foam performance
- Enhanced film strength for improved load carrying and surface protection
- Compatible with yellow/white metals and petroleum oils
- Protects against corrosion even in high-moisture environments
- Effective seal conditioning to reduce leakage and extend seal life
- High flash/fire points and thermal stability
- Meets acute aquatic toxicity limits (LC-50/EC-50 >1000 ppm) per US EPA and USFWS
- Meets or exceeds API GL-1, GL-2, GL-3, DIN 51517 Part 3, AGMA Non-EP

Application / New Filling

- Designed for use in ship stern tubes, fin stabilizers, and CPP systems requiring emulsifying stern tube lubricants
- Performs under static, mid-dynamic, and dynamic conditions with excellent water tolerance
- Compatible with seals made of Viton, fluorosilicone, Teflon, polyurethane, Buna-N, and HNBR
- Not recommended with natural rubber or SBR seals
- Match ISO viscosity to OEM requirements for optimal system performance
- Contact Renewable Lubricants, Inc. for flushing and system conversion guidance when replacing mineral oil fluids

Specifications and Approvals

- DIN 51517 Part 3
- AGMA Non-EP
- API GL-1, GL-2, GL-3
- ASTM D-5864 Ultimately Biodegradable
- OECD 301B Readily Biodegradable
- EPA 2013 Vessel General Permit (VGP) – Compliant
- LC-50 / EC-50 >1000 mg/L
- USDA BioPreferred Certified
- Patented Stabilized™ additive system – US Patents 6,383,992 and 6,534,454

TYPICAL SPECIFICATIONS					
ISO Viscosity Grade		**68**	**100**	**150**	**220**
VISCOSITIES:	ASTM D-445				
@100^{O}C., cSt.		12.7	17.1	24	31
@40^{O}C., cSt.		64.2	94.1	145	203
Viscosity Index	ASTM D-2270	202	199	198	196
Flash Point, COC, ^{O}C	ASTM D-92	259	262	268	270
Pour Point, ^{O}C	ASTM D-97	-36	-34	-31	-26
Copper Corrosion (3h@100^{O}C)	ASTM D-130	1A	1A	1A	1A
4-Ball Wear (mm)	ASTM D-4172	0.35	0.35	0.35	0.35
Emulsion @ 60 min. avg. 60 ml.	ASTM D-1401	Pass	Pass	Pass	Pass
Rust Prevention Syn. Seawater	ASTM D-665B	Pass	Pass	Pass	Pass
Humidity Cabinet >10 days	ASTM D-1748	Pass	Pass	Pass	Pass
Galvanic Corrosion	FED-STD 7915#5322	Pass	Pass	Pass	Pass
Corrosion/Oxidation @100^{O}C	ASTM D-4636	Pass	Pass	Pass	Pass
Foam Sequence I, II, III	ASTM D-892	Pass	Pass	Pass	Pass
FZG Test A/8,3/90	DIN 51354Part 2	>12	>12	>12	>12
2013 Vessel General Permit	**US EPA**	**yes**	**yes**	**yes**	**yes**
RLI Product Item #		**84500**	**84510**	**84520**	**84530**