

Bio-Syntra™, Bio-SynXtra™, and Bio-SynXtra™ LV Metal Working Oils

Biobased, Heavy-Duty and Extra Heavy-Duty Metal Working/Machining Oils

Bio-Syntra™, Bio-SynXtra™, and Bio-SynXtra™ LV are readily biodegradable, biosynthetic-blend metalworking oils designed for heavy-duty and extra heavy-duty machining applications. Formulated with natural and synthetic esters, these oils reduce smoke and mist while providing superior extreme pressure (EP) and antiwear protection. Their transparent color allows visibility during cutting operations, and they are non-staining to yellow metals, making them suitable for ferrous and non-ferrous alloys.

Benefits

- Readily biodegradable, non-toxic, and not bioaccumulative
- Excellent EP and antiwear performance
- Transparent for visual inspection during cutting
- Non-staining to yellow metals
- No active sulfur, chlorine, zinc, phosphorus, silicon, or heavy metals
- Low odor and smoke for improved workplace safety
- Suitable for machining steel, stainless steel, Inconel, and Hastelloy
- Compatible with multiple operations: stamping, drawing, milling, drilling, turning, grinding, honing, broaching, thread cutting, and tapping
- Compliant with EPA VGP EAL guidelines
- Exceeds US EPA and US Fish & Wildlife Service acute toxicity standards
- Stabilized™ HOBS Technology provides enhanced oxidative, thermal, and cold flow stability

Application / New Filling

Recommended for use in:

- Heavy-duty and extra heavy-duty machining of ferrous and non-ferrous alloys
- Industrial machining applications requiring biodegradable, low-toxicity lubricants
- Environments where visual inspection of machining is necessary
- Applications requiring EPA-compliant Environmentally Acceptable Lubricants (EALs)

Product Notes:

- Bio-Syntra™ offers lower EP performance at reduced cost
- Bio-SynXtra™ provides higher EP performance for hard metals
- Bio-SynXtra™ LV is a low-viscosity version for high-precision applications

STABILIZED™
by Renewable Lubricants

Specifications and Approvals

- EPA Vessel General Permit (VGP) Compliant – Environmentally Acceptable Lubricants (EALs)
- ASTM D 5864 Ultimately Biodegradable
- OECD 301B Readily Biodegradable
- Exceeds LC-50 / EC-50 > 1000 ppm toxicity threshold
- Stabilized™ HOBS Technology
 - o U.S. Patents: 6,383,992; 6,534,454; 6,624,124; 6,620,772 (and others pending)

TYPICAL SPECIFICATIONS			
	<u>Bio-Syntra 32</u>	<u>Bio-SynXtra 46</u>	<u>Bio-SynXtra LV 22</u>
VISCOSITIES: @100°C., cSt.	7.5	9.3	5.8
@40°C., cSt.	31.5	44.4	21.6
Viscosity Index	219	200	234
Flash Point, COC °C	209	230	190
Pour Point, °C	-23	-20	-18
Copper Corrosion ASTM D-130	1B	1B	1B
Rust Prevention ASTM D-665	No Rust	No Rust	No Rust
4-Ball EP Weld Pt. ASTM D-2783 (kg)	500	>800	>800
Taping (Relative Efficiency %) 4140 Steel	99.8		
1020 HR Steel		120	120
1018 Forming Steel		100	100
304 Stainless Steel		100	100
RLI Product Item #	86860	86870	86850