



Renewable Lubricants, Inc.

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Bio-High Temperature™ Oven Lubricants **ISO 68, 100, 150, 220 (USDA H-1)**

STABILIZED™
by Renewable Lubricants

"Biobased Lubricants that Perform Like Synthetics"

Bio-High Temperature™ Oven Lubricants are unique biobased biodegradable food grade¹ lubricants designed to lubricate bearings, chains, slides, and gears in industrial applications where air temperatures often exceed 500°F. These products are free of Volatile Organic Compounds (VOCs) and provide an auto ignition temperature (ASTM D-659) of over 371°C.

Applications:

- Roller chains on oven conveyors
- Lithographic chains, beverage can lines
- Tenter frames in textile plants
- Kiln car wheel bearing/refractory plants
- Paint lines, drying ovens
- Sealed for life units
- Kiln support rollers, cement plants
- Bakery oven chains
- Automatic lubrication systems
- Many others

Outstanding Advantages:

Exceptional High Temperature Stability- made from biobased and biodegradable base oils that reduce tendency to form hard carbon deposits in high temperature applications.

Cleanliness-ashless; helps to eliminate accumulation of hard carbon solids that create maintenance clean-up problems and downtime, cleans chains already dirtied by inferior lubricants.

Better Protection- reduces wear, rust, oxidation, and corrosion; extends equipment life, reduces maintenance costs.

Low Volatility- maintains a liquid lubricating film at elevated temperatures, thus providing substantially longer lubrication intervals, reduced lubricant consumption, less smoke, and no bad odors.

Energy Efficient- clean, fluid-film lubricants, reduce energy consumption in equipment.

Optimum Viscosity- is provided by the Super High Viscosity Index that gives optimum lubrication at higher operating temperatures.

Bio-High Temperature™ Oven Lubricants are ENVIRONMENTALLY RESPONSIBLE products that are formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable materials.

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.

¹Base oils and additives in these products are listed in 21 CFR 178.3570, Lubricants for incidental food contact (USDA H-1). Full compliance with other applicable restrictions of FDA, USDA, oil spill, and oil pollution prevention statutes is recommended.

Patented Product with Pending and Foreign Patents

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Availability **F.O.B. :Hartville, Ohio, USA**

5 Gallon Pails

Drums

Bulk

Typical Specifications for Bio-High Temperature Oven Lubricants (H-1)

ISO Grade	68	100	150	220
Specific Gravity @ 60°F, (ASTM D-287)	.89	.89	.90	.90
Viscosity (ASTM D-445) @100°C cSt @40°C cSt	11.8 65.0	16.9 99.0	230 149.0	29.2 203
Viscosity Index (ASTM D-2270)	180	186	184	184
NOACK Volatility %, 250°C (ASTM D-5800)	2.5	2.0	2.0	2.5
Evaporation Loss, Wt %, 6.5 hrs, 250°C (ASTM D-972)	3.5	3.0	3.0	3.5
Flash Point (ASTM D-92)	527°F (275°C)	554°F (290°C)	550°F (288°C)	554°F (290°C)
Fire Point, COC (ASTM D-92)	563°F (295°C)	576°F (302°C)	600°F (316°C)	600°F (316°C)
Pour Point (ASTM D-97)	-28	-25	-25	-25
Rust Prevention A,B (ASTM D-665)	Pass	Pass	Pass	Pass
4 Ball Wear, 1h, 167°F ,1200 RPM, 40kg (ASTM D-2266)	0.40	0.40	0.40	0.40

Optimum Viscosity- is provided by the Super High Viscosity Index (VI) that gives energy efficiency and optimum lubrication at higher operating temperatures. The chart below shows the exceptional viscosity performance of the Bio-HT Oven Lubricant ISO 220 (VI of 184) compared to a conventional petroleum based lubricant ISO 220 (VI 95). Bio-HT Oven Lubricants provide a lighter fluid at room temperature, but maintains double the fluid film (viscosity in cSt) over 100°C.

