MOLYKOTE®
FROM DOW CORNING
TM

Molykote® Synthetic Oil Extends Lubricant Lifetime by 57% in Air Compressor Application

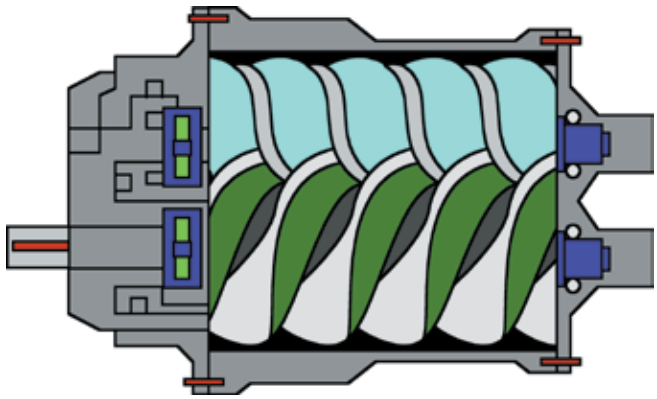
Additive package extends fill interval to >12,000 hours.

Molykote® L-1246 Synthetic Compressor Oil performed nearly two-thirds longer than other synthetic fluids in a lubrication life test of a heat-accelerated rotary screw air compressor. Because of the combined attack of heat and concentrated oxygen inherent to air compressor applications, this application pushes the limits of what even synthetic lubricant products can withstand. Translating the test results into field conditions shows that the service lifetime of the *Molykote*® brand product could exceed 12,000 hours, lasting about 18 months in 24/7 operation. Actual oil life will vary depending on the conditions of the specific application. The use of Dow Corning's oil analysis program will help determine the actual useful life of the oil in your application.

Inside Compressors

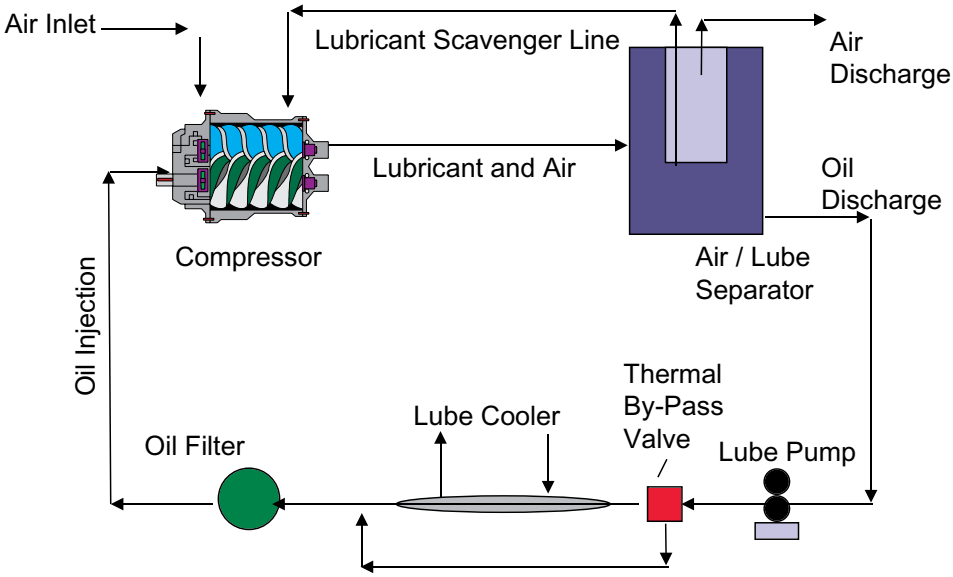
To understand the advantages of this premium fluid, consideration should be given to special demands of the application. In a rotary screw compressor, the lubricant performs several difficult functions:

- Lubricating the shaft seals, bearings and rotating screws
- Removing the heat of compression
- Providing a seal between screws and housing so gas can be compressed without blow-by
- Removing contaminants from the system; i.e., ingested dust and dirt materials
- Protecting against corrosion



In a compressor, the fluid is recirculated in a closed system, and it flows from the compressor to the separator. From there it is pumped to a cooler, through a filter, and back again to the compressor. Breakdown of the lubricant or its capabilities causes compressor problems.

Many fluids have difficulty surviving the combined attack of mixing air oxygen and elevated temperatures (typically, up to 210°F). Oxidation occurs rapidly because of reactions between oxidant impurities in the lubricant (especially in mineral oil) and the compressed oxygen. Oxidation is accelerated by heat, causing a sudden increase in viscosity and lubricant failure.



Comparative Testing

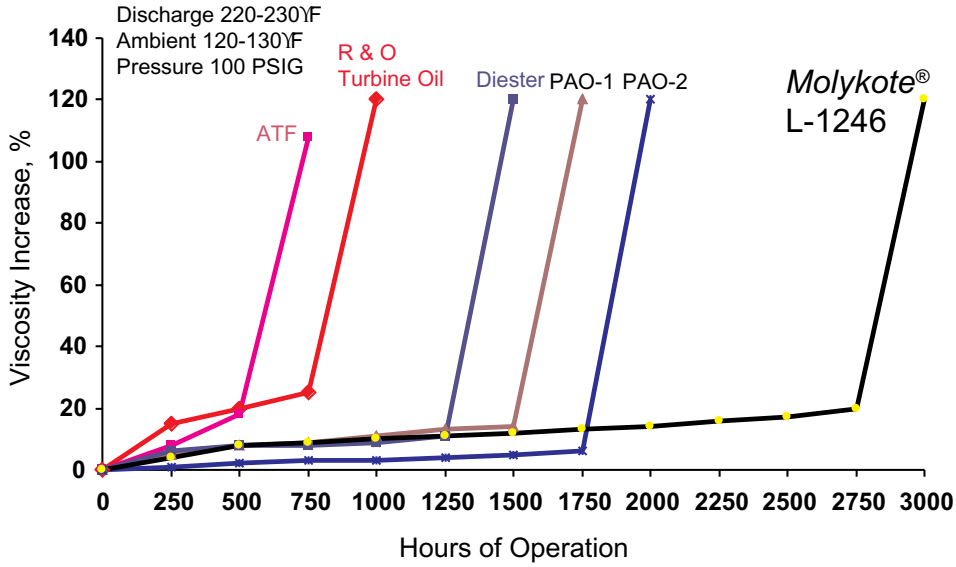
Under these severe conditions, mineral oils typically last only 1000 hours. By comparison, lubricants made from synthetic base stocks were developed to extend the drain interval. The initial synthetic products lasted 6-8 times as long as conventional mineral oils in this application. *Molykote* L-1246 Synthetic Compressor Oil extends the interval as much as 10 times.

An accelerated test was performed to compare the expected lifetimes of several oils. In the test the compressor operated at a discharge temperature of 230°F. This high temperature accelerated the oxidation and ultimate failure of all the compressor fluids tested. The actual field lifetime of a fluid is usually 4-5 times the lifetime shown in the test.

In the test, *Molykote* L-1246 Synthetic Compressor Oil lasted 57 percent longer than one competitive PAO synthetic formulation and 83% longer than another did. Non-synthetic lubricants (at left of chart) performed noticeably worse, as expected. These results confirm that *Molykote* L-1246 Synthetic Compressor Oil offers superior lifetime, which results in extended fill intervals over other PAO formulations in air compressor applications.

Keys to Performance

Synthetic lubricants are made by chemically building complex molecules from hydrocarbon "building blocks." They feature identical, strong molecular bonds in a saturated molecular structure. This provides more resistance to oxygen attack at rated operating temperatures and less heat-generating friction. Synthetic lubricants achieve full lubrication more quickly at start-up and therefore reduce component wear. Also, the synthetic lubricant's resistance to oxidation and other properties leads to longer service lifetime, more efficient lubrication and less formation of undesirable by-products in the lubricant.



In addition to its saturated molecular structure, *Molykote* L-1246 Synthetic Compressor Oil contains a proprietary antioxidant additive package. This package keeps oxidation to a minimum and provides the extended lubricant life that creates the true value of synthetic oils.

Summary of Typical Benefits

- Fewer oil changes
- Lower waste lube disposal costs
- Fewer filters
- Lower labor costs
- Power and energy savings
- Lower operating temperatures
- Fewer replacement parts
- Fewer scheduled maintenance interruptions
- Fewer breakdowns/unscheduled interruptions
- Wider operating temperature range
- Extended equipment life

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