



# TRIBOL<sup>®</sup> 890 SYNTHETIC COMPRESSOR OILS

## Product Data Sheet

Tribol 890 Synthetic Compressor Oils are fully synthetic lubricants formulated for long service life and clean deposit-free operation.

### DESCRIPTION

Tribol 890 Synthetic Compressor Oils are manufactured in several viscosity grades to satisfy the lubrication needs of essentially all air compressors and compressors of many other process gases as well.

- Tribol 890 Light for Rotary Compressors, ISO VG 32/SAE 10W
- Tribol 890 Medium for Rotary Compressors, ISO VG 68/SAE 20
- Tribol 890 Heavy for Reciprocating Compressors, ISO VG 100/SAE 30

The base fluids in Tribol 890 Synthetic Oils are made from polyol and dibasic-acid ester, synthesized and blended specifically to optimize properties vital to good compressor operations. They have a natural stability against decomposition and oxidation at high operating temperatures and thus a low tendency to form lacquers or deposits. The Synthetic base fluids also have very low volatility and high flash and autoignition temperatures.

Tribol 890 Oils are designed for excellent natural oil film strength and lubricity and are additionally formulated with load-carrying, antiwear additives. An advanced technology additive system also enhances oxidation stability, inhibits foaming, and protects against corrosion. Tribol 890 Compressor Oils are not corrosive to either ferrous or non-ferrous metals.

By replacing conventional petroleum oils with Tribol 890 Synthetic Oils the following benefits are possible:

- Significantly extended service life
- Cleaner, more deposit-free operation
- Safety from deposit ignition, fire, and explosion
- Increased efficiency by eliminating recompression

### APPLICATIONS

**Rotary Vane and Rotary Screw Compressors** - Where circulation systems inject oil directly into

the air stream to lubricate, cool, and seal the compressor. Tribol 890 Light and Tribol 890 Medium perform better than petroleum oils in flooded rotary vane and screw compressors. By minimizing varnish and carbon deposits, Tribol 890 can extend drain intervals from 1,000 hours to more than 5,000 hours in most vane compressors and sometimes to well over 8,000 hours in flooded screw compressors.

**Reciprocating Compressors** - Tribol 890 Heavy is used for both crankcase and upper cylinder lubrication in reciprocating compressors. Crankcase drain intervals can be greatly extended and significant reductions in valve inspections and cleaning are possible. Lower volatility permits lower feed rates to reduce carryover and deposit formation.

**Hydraulic and Circulating Systems, Gear, Bearings** - wherever rust and oxidation inhibited (R&O) turbine type of circulating oils are specified. Tribol 890 is particularly well suited where operating temperatures and ranges are extreme or marginal for petroleum oils.

### ADVANTAGES

**In Rotary Vane and Rotary Screw Compressors** lower volatility means less oil contamination of plant air, greater demister efficiency, less maintenance of filters and separators, and reduced oil consumption.

Superior oxidation stability and natural cleansing action prevent the formation and buildup of varnish, sludge, or deposits. This minimizes wear and maintains clearances for maximum compressor efficiency and for optimum cooling and sealing.

In Single or Multiple-Stage Reciprocating compressors - Formation and buildup of varnish and carbon deposits are all but eliminated to prevent valve wear or sticking which allows recompression. The resulting benefits are less heat generation and reduced fire potential as well as reduced energy input required for constant discharge capacity.

Please see Reverse Side for More Advantages, Notes, and Typical Properties.

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TRIBOL 890 10-92 -R11  
Formerly PDS 782-11 10/92  
Molub-Alloy<sup>®</sup> Optimol<sup>®</sup> Tribol<sup>®</sup>

## Advantages (Continued)

General Advantages in all Operations:

- Greatly extended oil life in circulation systems and crankcases - 4 to 8 times longer than petroleum oils.
- Lower maintenance and labor costs incurred from less frequent oil change, filter, and accessory service, inspection, and removal of deposits, and parts replacement.
- Improved profits from fewer production interruptions.
- Year-round service from a single product with extreme low and high temperature range.
- Compatibility with virtually all seals and construction materials used in modern compressor systems.

## Notes

Changeover from petroleum oils to Tribol 890 should always be preceded by a very thorough cleanout. Although 890 Oils are compatible with petroleum, any residual mineral oil will soon oxidize and contaminate Tribol 890, shortening the anticipated service life (See TB2190 "Compressor Changeover Cleanout is Essential").

Tribol 890 Oils soften polycarbonate and should **not** be used with this material.

Under **no** circumstances should these fluids be used where neoprene seals and E.P.D.M. elastomer sealing materials are present anywhere in the air system.

For specific terms, conditions, warranty, and availability, refer to Tribol Price List in effect at time of purchase.

## TYPICAL PROPERTIES

## TRIBOL SYNTHETIC COMPRESSOR OILS

|  | 890 Light | 890 Medium | 890 Heavy |
|--|-----------|------------|-----------|
| ISO Viscosity Grade  | 32        | 68         | 100       |
| AGMA Lubricant Number  | N/A       | 2          | 3         |
| Specific Gravity, ASTM D1298 @ 15.6°C/60°F                                 | 0.9879    | 0.9700     | 0.9570    |
| API Gravity, ASTM D1298 @ 15.6°C/60°F                                      | 9.7       | 14.5       | 16.3      |
| Viscosity, ASTM D445, D2161  |           |            |           |
| @ 20°C cSt   | 72        | 217        | 391       |
| @ 40°C cSt   | 30.4      | 68         | 100       |
| @ 50°C cSt   | 21.4      | 43         | 58        |
| @ 100°C cSt  | 6.08      | 8.6        | 9.5       |
| @ 100°F, cSt/SUS   | 33.1/155  | 76/352     | 114/528   |
| @ 210°F, cSt/SUS   | 6.2/47    | 8.8/55     | 9.7/58    |
| Flash Point, ASTM D92, COC, °C/°F  | 243/470   | 254/490    | 263/505   |
| Fire Point, ASTM D92, COC, °C/°F   | 279/535   | 282/540    | 293/560   |
| Pour Point, ASTM, D97, °C/°F   | -51/-60   | -34/-30    | -34/-30   |
| Autogenous Ignition Temperature, °C/°F                                     | 410/770   | 410/770    | 427/800   |
| Conradson Carbon Residue, ASTM D189, Finished Oil, wt %                    | 0.10      | 0.02       | 0.02      |
| Extended Oxidation-Corrosion Stability, FTM-5308.6, modified, @175°C/347°F |           |            |           |
| Hours to Termination of Test   | 600       | 288        | 288       |
| Change in Total Acid No. by termination                                    | +2.8      | +4.6       | +0.6      |
| Four Ball Wear Test (40 kg., 75°C/167°F, 1800 rpm, 1 hr.)                  |           |            |           |
| Scar Diameter, mm  | 0.5       | 0.5        | 0.5       |
| Demulsibility, ASTM D1401 @54°C/130°F                                      | Pass      | Pass       | Pass      |
| USDA Code  | H2        | H2         | H2        |

Subject to usual manufacturing tolerances

\*Modification was to increase airflow to 23 liters per hour to simulate severity of air compressor operation. Tests were to be terminated at the occurrence of a "break" (sharp increase in Total Acid Value). "Sharp breaks" - common with petroleum lubricants and with some synthetics were not experienced with Tribol 890 Oils, so tests were arbitrarily discontinued as indicated.