

## #158 MOLY PURE SYNTHETIC COMPRESSOR OIL

### ISO 32 THROUGH ISO 150

Moly Pure Synthetic Compressor Oil is a completely synthetic non detergent, anti-wear oil that is specially formulated to satisfy the lubrication needs of oil flooded rotary vane and rotary screw compressors, screw type compressors and reciprocating air compressor, pumps, vacuum pump and refrigeration.

Moly Pure Synthetic is blended from the highest quality hydro-finished polyalphaolefin (PAO) synthetic base fluids available. These PAO base fluids provide Moly Pure Synthetic Compressor Oil with the following advantages:

1. **Excellent Resistance To Thermal Degradation** – Carbon, varnish and lacquer deposits due to high temperature operation are virtually eliminated.
2. **Superior Oxidative Stability** – Any oil, as it is increasingly exposed to high temperature operation, undergoes the process of oxidation. This results in the oil's thickening and build-up of acidic components. Because of the PAO's uniform molecular structure, the process of oxidation is greatly reduced.
3. **Extended Drain Intervals** – Because of the PAO's excellent resistance to thermal degradation and oxidation, Moly Pure Synthetic Compressor Oil's service life is extended up to eight (8) times the normal service life of the conventional compressor oils.
4. **Low Volatility** – The low volatility of the PAO's results in lower makeup requirements due to evaporation loss.
5. **Less Oil Carry Over** – Due to its low volatility, there are fewer problems with the oil getting into air tools, instruments or even the production process. It also means there is less oil to remove in the air/oil separators and fewer air filter changes.
6. **High Viscosity Index** – This results in a minimum change in viscosity with temperature. The adequate viscosity for proper bearing lubrication is provided regardless of temperature change.
7. **Excellent Cold Temperature Starting and Pumpability.**
8. **Fire And Explosion Possibilities Are Greatly Reduced** – This is due to not only the PAO's extremely low carbon forming tendencies, but also to their relatively high flash, fire and auto ignition points.
9. **Greater Hydrolytic Stability And Demulsibility Characteristics** – Since PAO's are non-polar, they absorb less water under high humidity conditions. They also separate condensed water much faster and more completely, thus resulting in the water being removed easily from the system. These properties result in extended bearing life, anti-wear protection and improved rust and corrosion protection.
10. **Excellent Operating Temperature Reduction** – PAO's have better specific heat valves (less available heat is absorbed) and better thermal conductivity than conventional air compressor oils. These combined properties help to reduce operating temperatures.
11. **Compatibility With All Types Of Seals And Coatings.**
12. **Excellent Miscibility and Low Solubility with Refrigerant Gases.**

Continued on Next Page

TD-158 (Rev. 1/97)

Combined with these polyalphaolefin base fluids is a highly specialized additive package which provides Moly Pure Synthetic Compressor Oil with the following performance benefits:

1. Exceptional anti-wear protection
2. Extended compressor life
3. Extended bearing life
4. Enhanced thermal & oxidation stability
5. Superior hydrolytic stability
6. Excellent demulsibility characteristics
7. Excellent rust and corrosion protection
8. Excellent anti-foaming and air release properties
9. Reduced sludge, varnish and deposit formation
10. Enhanced fluid life
11. Enhanced seal life
12. Better heat transfer
13. Reduced system maintenance
14. Reduced downtime
15. Reduced power consumption

Further blended into these polyalphaolefin base fluids and this highly specialized additive package is a proven frictional modifier, Micron Moly®. Micron Moly® is a liquid soluble type of moly that plates itself to the sliding and rubbing parts of the compressor. This plating action reduces friction between the moving parts, thus eliminating damaging frictional wear. This in turn also helps to reduce operating temperatures.

Moly Pure Synthetic Compressor Oil with its unique blend of polyalphaolefin base fluids, highly specialized additive package and Micron Moly® results in improved compressor efficiency. This improved compressor efficiency not only results in less downtime, reduced labor and material cost, but also in reduced energy consumption. This results in savings which could possibly represent many thousands of dollars each year per compressor.

Moly Pure Synthetic Compressor Oil meets and exceeds all the lubrication specifications of the various compressor manufacturer's such as Joy, Ingersoll Rand, Quincy, Kaeser, Worthington, Atlas Copco, Gardner Denver and Sullair.

Typical Properties on Next Page

TYPICAL PROPERTIES

ISO Grade	32	46	68	100	150
Specific Gravity	.825	.83	.87	.835	.835
Viscosity 100°F SUS (ASTM D-445)	149-171.6	235.2-255.7	350.9-376.6	490.9-540.3	748.7-827.2
Viscosity 40°C Cst (ASTM D-445)	29.00-33.50	46.00-50.00	68.50-73.50	95.50-105.00	145.00-160.00
Viscosity 100°C Cst (ASTM D-445)	5.52-6.09	7.69-8.15	10.38-10.98	13.26-14.22	18.17-19.52
Brookfield Viscosity @ 0°F/-18°C cP (ASTM D-2983)	460	910	2435	----	----
Brookfield Viscosity @ -20°F/-29°C cP (ASTM D-2983)	1735	4360	10750	----	----
Viscosity Index	130	135	138	138	140
Flash Point °F/°C (ASTM D-92)	455°/235°	460°/237.7°	495°/257.22°	530°/276.67°	530°/276.67°
Fire Point °F/°C (ASTM D-92)	529°/276°	535°/279.4°	530°/276.67°	560°/293.33°	560°/293.33°
Auto Ignition Temp °F/°C (ASTM D 2155)	730°/387.7°	750°/398.8°	750°/398.8°	750°/398.8°	750°/398.8°
Pour Point °F/°C (ASTM D-97)	-65°/-53.89°	-65°/-53.89°	-65°/53.89°	-40°/-40°	-35°/-37.22°
Stable Pour Point °F/°C (FTM D-203)	-44°/-42°	-44°/-42°	-44°/-42°	----	----
Neutralization Number (ASTM D-974)	0.4-0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.4-0.8
Rotary Bomb Oxidation Test, minutes (ASTM D-2272)	1140/1320	1150/1330	1150/1330	1150/1330	1150/1330
Foam Test (ASTM D-892)					
Sequence I	0/0	0/0	0/0	0/0	0/0
Sequence II	0/0	0/0	0/0	0/0	0/0
Sequence III	0/0	0/0	0/0	0/0	0/0
Air Release (ASTM D-3427)					
Time (min @122°F)	0.25	0.25	0.25	0.25	0.25
% Evaporation Loss 22 hrs @ 300°F (ASTM D-972)	0.2	0.2	0.2	0.2	0.2
% Evaporation Loss @ 700°F/371.11°C (ASTM D-2889)	2.6	2.6	2.6	3	3.5
Four Ball EP (ASTM D-2783)					
Weld Point, kg	250	250	250	250	250
LWI, kg	77.1	77.1	78.2	78.2	78.2
Aniline Point °F/°C (ASTM D-611)	265°/129.44°	270°/132.22°	270°/132.22°	285°/140.56°	287°/141.67°

TYPICAL PROPERTIES (continued)

<b>ISO Grade</b>	<b>32</b>	<b>46</b>	<b>68</b>	<b>100</b>	<b>150</b>
<b>Rust Test (ASTM D-665)</b>					
Procedure A (Distilled Water)	Pass	Pass	Pass	Pass	Pass
Procedure B (Salt Water)	Pass	Pass	Pass	Pass	Pass
<b>Four Ball Wear Test (ASTM D-4172)</b>					
(1hr 167°F, 1800 RPM, 40 kg)					
Scar Diameter	.18	.18	.18	.18	.18
Average Coefficient of Friction	.08	.08	.08	.08	.08
<b>Four Ball Test (ASTM D-4172)</b>					
(1hr 130°F, 1800 RPM, 20 kg)					
Scar Diameter	.27	.27	.27	.33	.33
<b>Falex Continuous Load (ASTM D-3233)</b>					
Failure Load, lbs.	1250	1250	1250	1500	1500
<b>Conradson Carbon Residue (ASTM D-189)</b>					
% Residue	.001	.001	.001	.005	.005
<b>Vickers Pump Wear Test (ASTM D-2882)</b>					
Total Wt. Loss, mg	15	15	15	15	15
<b>Demulsibility (ASTM D-1401)</b>					
Oil, Water, Emulsion	40-40-0	40-40-0	40-40-0	40-40-0	40-40-0
Time	10	10	10	10	10
<b>Hydrolytic Stability (ASTM D-2619)</b>					
Copper Wt Loss (mg/cm <sup>2</sup> )	0.065	0.065	0.065	0.065	0.065
Acidity of Water	1	1	1	1	1
<b>Copper Strip Corrosion (ASTM D-130)</b>	1a	1a	1a	1a	1a
<b>Oxidation Stability Test (ASTM D-943)</b>					
Hrs. to TAN of 2	+10000	+10000	+10000	+10000	+10000

Continued on Next Page

TYPICAL PROPERTIES (continued)

<b>ISO Grade</b>	<b>32</b>	<b>46</b>	<b>68</b>	<b>100</b>	<b>150</b>
Sludge Tendencies (ASTM D-4310)					
Total sludging	18	18	18	18	18
Total Copper, mg	15	15	15	15	15
Total Iron, mg	0.1	0.1	0.1	0.1	0.1
Neutralization Number	0.2	0.2	0.2	0.2	0.2
Thermal Stability					
(Cincinnati Milicron Method 168hrs./135°C, copper, steel catalyst)					
Sludge (mg/100ml)	2	2	2	2	2
Condition of Copper Rod	1	1	1	1	1
Condition of Iron Rod	1	1	1	1	1

Packaging: #158 Moly Pure Synthetic Compressor Oil is available in 55 gallon drums, 30 gallon drums and 5 gallon pails.