SINCE 1839 Schaeffer's SPECIALIZED LUBRICANTS

TECHNICAL DATA

102 Barton Street, St. Louis MO 63104
Ph: 800-325-9962 / Fax: 314-865-4107
www.schaefferoil.com

ISO 9001 CERTIFIED

158 PURE SYNTHETIC COMPRESSOR OIL ISO 22 THROUGH ISO 220

Pure Synthetic Compressor Oil is a full synthetic, non-detergent, ashless, non-zinc containing anti-wear, rust and oxidation inhibited premium quality oil that is specially formulated to satisfy the lubrication needs of oil flooded rotary vane and rotary screw compressors, screw type and reciprocating air compressors, pumps, vacuum pumps and blowers.

Pure Synthetic is blended from the highest quality hydro-finished polyalphaolefin (PAO) synthetic base fluids available and a highly specialized additive package. This combination provides the following advantages:

- **Low volatility for lower makeup requirements and less oil carry over**
- **High viscosity index**
- **Exceptional anti-wear protection**
- **Extended bearing and compressor life**
- **Enhanced thermal & oxidation stability**
- **Superior hydrolytic stability**
- **Excellent demulsibility characteristics**
- **Excellent rust and corrosion protection**
- **Excellent anti-foaming and air release properties**
- **Reduced sludge, varnish and deposit formation**
- **Compatibility with all types of seals and coatings**
- **Enhanced seal and fluid life**
- **Excellent operating temperature reduction for better heat transfer**
- **Compatibility with zinc based fluids**
- **Improved compressor efficiency and reduced power consumption**
- **Reduced system maintenance with reduced down time**

Pure Synthetic Compressor Oil also contains Micron Moly®, 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 and reduceing operating temperatures.

Pure Synthetic Compressor Oil meets and exceeds all the lubrication specifications of the various compressor manufacturers' such as Joy, Ingersoll Rand, Quincy, Kaeser, Worthington, Atlas Copco, Gardner Denver and Sullair and meets the performance requirements for ISO-L-DAC, ISO-L-DAJ, ISO-L-DVA, and ISO-L-DVD

CHANGE-OUT PROCEDURE WHEN SWITCHING FROM POLYALKYLENE GLYCOL AND POLYALKYLENE GLYCOL/POLYOL ESTER BLENDS COMPRESSOR FLUIDS

This fluid procedure is designed for those compressors that are currently using a Polyalkylene Glycol or Polyalkylene Glycol/Polyol Ester blend such as Ingersoll Rand's SSR Ultra Coolant or Sullair's Sullube 32. This fluid procedure is designed for those compressors that are currently using a Polyalkylene Glycol or Polyalkylene Glycol/Polyol Ester blends are not compatible with petroleum or other type of synthetic base fluids, such as polyalphaolefin (PAO) and diester based compressor fluids. When petroleum based or synthetic based compressor fluids are mixed with a Polyalkylene Glycol or Polyalkylene Glycol/Polyol Ester blends the possibility of gelling of the products can occur.

Because of this possibility Schaeffer Mfg recommends that if a compressor application is being changed over from a Polyalkylene Glycol or Polyalkylene Glycol/Polyol Ester blend compressor fluid to #158 Pure Synthetic Compressor Fluid that the following procedure be strictly followed:

Procedure Steps

- **Drain the compressor as completely as possible. Disconnect the air and fluid lines as completely as possible. Remove all oil filters and air/oil separators. Wipe out the air/oil separator bowl with a clean rag to remove any fluid residue.**
- **Reconnect the lines and replace all the oil filters and air/oil separators with new elements. Charge the compressor with an either an inexpensive or the #158 Moly Pure Synthetic**
- **Compressor Fluid in the proper ISO Viscosity Grade. Run the compressor for 1-hour only.**

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- **Repeat Step 3.**
- **With the oil drain plug removed, begin filling the compressor slowly with #158 Pure Synthetic Compressor Fluid in the appropriate ISO Viscosity Grade. Allow the new fluid to push any remaining fluid out of the compressor. When new oil is seen, replace the drain plug and fill the compressor.**
- **Start the compressor and top off the oil level.**

For additional change-out procedures involving other types of compressor fluids see Technical Bulletin 080303 COMPRESSOR CHANGEOVER PROCEDURES FOR #112 HTC, #254 HTC SUPREME AND #158 PURE SYNTHETIC COMPRESSOR OIL

TYPICAL PROPERTIES

ISO Grade	**22**	**32**	**46**	**68**	**100**	**150**	**220**
Specific Gravity	.82	.825	.83	.87	.835	.835	.8441
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	1121.4-1268.1
Viscosity 40°C cSt (ASTM D-445)	17.9-21.0	29.0-33.5	46.0-50.0	68.5-73.5	95.5-105.0	145.0-160.0	217-245
Viscosity 100°C cSt (ASTM D-445)	4.0-5.7	5.52-6.09	7.69-8.15	10.38-10.98	13.26-14.22	18.17-19.52	27.00-29.50
Viscosity Index	130	130	135	138	138	140	159
Flash Point °F/°C (ASTM D-92)	425°/219°	455°/235°	460°/238°	495°/257°	530°/277°	530°/277°	453°/234°
Fire Point °F/°C (ASTM D-92)	480°/249°	529°/276°	535°/279.4°	530°/276.67°	560°/293.33°	560°/293.33°	485°/252°
Auto Ignition Temp °F/°C (ASTM D 2155)	730°/388°	730°/388°	750°/399°	750°/399°	750°/399°	750°/399°	750°/399°
Pour Point °F/°C (ASTM D-97)	-65°/-54°	-65°/-54°	-65°/-54°	-65°/-54°	-40°/-40°	-35°/-37°	-15°/-26°
Total Acid Number (ASTM D-644)	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Rotary Pressure Vessel Oxidation Test, (ASTM D-2272) Minutes	1320	1320	1330	1330	1330	1330	1330
Foam Test (ASTM D-892)							
Sequence I	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Sequence II	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Sequence III	0/0	0/0	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	0.25	0.25
% Evaporation Loss 22 hrs @ 300°F (ASTM D-972)	0.2	0.2	0.2	0.2	0.2	0.2	0.25
% Evaporation Loss @ 700°F/371.11°C (ASTM D-2889)	2.6	2.6	2.6	2.6	3	3.5	3.5
Four Ball EP (ASTM D-2783)							
Weld Point, kg	250	250	250	250	250	250	250

LWI, kg	77.1	77.1	77.1	78.2	78.2	78.2	78.2
Aniline Point °F/°C (ASTM D-611)	265°/129°	265°/129°	270°/132°	270°/132°	285°/141°	287°/142°	287°/142°
Rust Test (ASTM D-665)							
Procedure A (Distilled Water)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Procedure B (Salt Water)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Four Ball Wear Test (ASTM D-4172) (1hr 167°F, 1800 RPM, 40 kg)							
Scar Diameter, mm	.18	.18	.18	.18	.18	.18	.18
Average Coefficient of Friction	.08	.08	.08	.08	.08	.08	0.8
Four Ball Test (1hr 130°F, 1800 RPM, 20 kg)							
(ASTM D-4172) Scar Diameter, mm	0.27	.27	.27	.27	.33	.33	.33
Falex Continuous Load (ASTM D-3233)							
Failure Load, lbs.	1250	1250	1250	1250	1500	1500	1500
Conradson Carbon Residue (ASTM D-189)							
% Residue		.001	.001	.001	.005	.005	.005
Demulsibility (ASTM D-1401)							
Oil, Water, Emulsion	40-40-0	40-40-0	40-40-0	40-40-0	40-40-0	40-40-0	40-40-0
Time	10	10	10	10	10	10	10
Hydrolytic Stability (ASTM D-2619)							
Copper Wt Loss (mg/cm2)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Acidity of Water	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Copper Strip Corrosion (ASTM D-130)	1a	1a	1a	1a	1a	1a	1a
Oxidation Stability Test (ASTM D-943)							
Hrs. to TAN of 2	+10,000	+10,000	+10,000	+10,000	+10,000	+10,000	+10,000
Sludge Tendencies (ASTM D-4310)							
Total sludging	18	18	18	18	18	18	18
Total Copper, mg	15	15	15	15	15	15	15
Total Iron, mg	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Neutralization Number	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Thermal Stability (ASTM D-2070) (Cincinnati Milacron Method 168hrs./135°C, copper, steel catalyst)							
Sludge (mg/100ml)	2	2	2	2	2	2	2
Condition of Copper Rod	1	1	1	1	1	1	1
Condition of Iron Rod	1	1	1	1	1	1	1
Denison T6H20C Hybrid Pump Test							
Vane, mgs. Weight Loss	6	6	6	6	6	---	---
Pins, mgs. Weight Loss	0.7	0.7	0.7	0.7	0.7	----	---
Total Pin & Vane, mgs Wt Loss	6.7	6.7	6.7	6.7	6.7	-----	---
Vickers Vane Pump 35VQ25							
Run 1							
Ring wt. Loss	17	17	17	17	17	---	---
Vane wt. Loss	3	3	3	3	3	---	---
Total wt. Loss	20	20	20	20	20	----	----
Run 2							
Ring wt. Loss	15	15	15	15	15	----	----
Vane wt. Loss	3	3	3	3	3	---	---
Total wt. Loss	18	18	18	18	18	---	---
Run 3							
Ring wt. Loss	29	29	29	29	29	----	----
Vane wt. Loss	7	7	7	7	7	---	---
Total wt. Loss	36	36	36	36	36	---	---
Denison Filterability TP-02100-A							
Without Water, seconds	217.5	217.5	217.5	217.5	217.5	217.5	217.5
With 2% Water, seconds	381	381	381	381	381	381	381
AFNOR Filterability NF48-690 and NF 48-691	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Dry Phase, minutes	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Wet Phase, minutes							