



Syncon[®] R&O Oil

Syncon R&O Oil is a multipurpose, synthetic circulating oil developed for use in a wide variety of industrial applications. The lighter viscosity grades (ISO 32, 46, 68 and 100) typically are recommended for use in rotary air compressors, circulating pumps, vacuum pumps and electric motor bearings operating under severe-service conditions or at extreme temperatures. The heavier viscosity grades (ISO 150, 220, 320, 460 and 680) typically are recommended for use in lightly loaded gearboxes that do not require an extreme-pressure gear oil. The medium viscosity grades (ISO 150 and 220) also are recommended for lubrication of the upper cylinders of gas compressors handling natural gas or process gas.

Syncon R&O Oil is formulated with synthetic polyalphaolefin (PAO) base fluids and select additives to provide excellent protection against rust, corrosion and deposit formation. It has outstanding oxidation resistance and thermal stability at high temperatures to minimize sludge and varnish formation, and provide long service life. It protects system components against rust, corrosion and wear. It has excellent low-temperature properties for use over a wide temperature range, and is resistant to excessive foam buildup that can interfere with proper lubrication.

Syncon R&O Oil is particularly recommended for use in circulating systems and lightly loaded enclosed industrial gearboxes where operating conditions may be unfavorable or too severe for conventional mineral oil-based circulating oils. It is compatible with mineral oil-based lubricants, but mixing should be avoided for optimum performance benefits.

Applications

- Rotary air compressors where the manufacturer specifies a PAO-based lubricant
- Plain and rolling-element bearings operating at very high or very low temperatures
- Lightly to moderately loaded enclosed industrial gearboxes that do not require an extreme-pressure gear lubricant
- Industrial worm gear drives with bronze-on-steel gears
- Circulating systems of paper machine dryer sections and calender stacks
- Lubrication of upper cylinders of natural gas and process gas compressors

**Synthetic PAO-
Based Rust And
Oxidation-Inhibited
Circulating Oil**

Contact Information

**U.S. Customer
Service:
1-800-822-6457**

**U.S. Technical
Services Hot Line:
1-800-766-0050**

**International:
+1-832-486-3363**

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- Industrial equipment operating over a wide temperature range where an inhibited mineral oil is recommended

Features/Benefits

- Outstanding resistance to thermal breakdown at high temperatures
- Outstanding oxidation resistance to minimize sludge and varnish formation
- Protects against wear
- Protects against rust and corrosion
- Good water-separating properties
- Good foam resistance
- Excellent low-temperature fluidity
- Low carbon-forming tendency for use in rotary air compressors
- Extended service intervals compared with conventional mineral oil-based lubricants
- Compatible with mineral oil-based lubricants⁽¹⁾

⁽¹⁾ **Note:** For optimum performance, the mineral oil lubricant should be drained before using Syncon R&O Oil. Mixing the two products can reduce the effectiveness and performance advantages normally gained by using Syncon® R&O Oil.

Note: For information on compatibility with seals, paints and plastics, please call our Technical Support Hot Line.

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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Syncon® R&O Oil

Typical Properties

ISO Grade	32	46	68	100	150	220	320	460	680
AGMA Grade	0	1	2	3	4	5	6	7	8
Specific Gravity @ 60°F	0.854	0.857	0.865	0.867	0.872	0.875	0.878	0.881	0.884
Density, lbs/gal @ 60°F	7.11	7.14	7.20	7.23	7.26	7.29	7.31	7.34	7.36
Color, ASTM D1500	L 0.5	L 0.5	L 0.5	L 0.5	L 1.0	L 1.0	L 1.0	L 1.0	L 1.0
Flash Point (COC),									
°C	245	270	275	275	246	246	243	243	243
°F	473	518	527	527	475	475	470	470	470
Pour Point,									
°C	-51	-39	-39	-39	-40	-38	-34	-29	-26
°F	-60	-38	-38	-38	-40	-37	-30	-20	-15
Viscosity,									
cSt @ 40°C	32.0	44.0	66.0	93.0	150	220	320	460	680
cSt @ 100°C	5.8	7.4	9.8	12.5	17.5	22.8	29.1	37.2	47.9
SUS @ 100°F	164	225	339	479	778	1,148	1,681	2,431	3,620
SUS @ 210°F	46	51	59	70	90	114	143	181	232
Viscosity Index	126	130	132	130	128	127	124	123	121
Acid Number, ASTM D974, mg KOH/g	0.17	0.17	0.17	0.17	0.20	0.20	0.20	0.20	0.20
Copper Corrosion, ASTM D130	1a	1a	1a	1a	1b	1b	1b	1b	1b
Demulsibility, ASTM D1401,									
minutes to pass	10	10	10	10	—	—	—	—	—
Foam Test, ASTM D892	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Four-Ball Wear, ASTM D4172,									
Scar Diameter, mm	0.40	0.33	0.48	0.33	0.40	0.40	0.40	0.40	0.40
FZG Scuffing Test, ASTM D5182,									
Failure Load Stage	9	9	9	9	10	10	10	10	10
Oxidation Stability,									
RPVOT, ASTM D2272, minutes	2,400	2,400	2,400	2,400	—	—	—	—	—
Rust Test, ASTM D665 A&B	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Health and Safety Information

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via <http://w3.conocophillips.com/NetMSDS>.

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