

**ULTRACHEM® R-PAO SERIES**

**SYNTHETIC PAO-REFRIGERANTS COMPRESSOR LUBRICANTS**  
PRODUCT CODES: RPAO 32, 46, 68, 100, 150, 220, 400

**PRODUCT OVERVIEW**

The Ultrachem R-PAO Refrigeration Oils are fully synthetic premium performance lubricants developed for use in rotary screw compressors in refrigeration service compressing Ammonia, methyl-chloride or Carbon dioxide. They are wax free, synthesized hydrocarbon poly alpha olefin (PAO) fluids which have outstanding resistance to thermal /oxidative degradation. They are formulated with carefully balanced additive package to provide long service life, excellent deposit control, protection against rust and corrosion. With their natural high shear stable viscosity indexes and low temperature fluidity, they can perform in severe service conditions that are beyond the capabilities of conventional mineral oils. Their solubility and miscibility with refrigerants are low, resulting in higher film thickness in the presence of refrigerants under pressure and reduced shaft seal leakage.

Ultrachem R-PAO oils are fully miscible with conventional mineral oils, but any mixture with mineral oils may detract from the superior performance properties of the synthetic product. They are not recommended for use with chlorinated hydrocarbons (CFCs), fluorinated hydrocarbons or Sulphur dioxide.

Ultrachem R-PAO refrigeration oils meets the requirements FDA 21 CFR 178.3570 H-1.

**APPLICATION DETAIL**

- Rotary screw refrigeration compressors operating under severe service conditions.
- Rotary compressors used in Ammonia & carbon dioxide refrigeration system.
- Commercial, industrial, heat pump and marine refrigeration system
- Recommended for both reciprocating & rotary compressor designs.

**KEY BENEFITS**

- Improved compressor anti wear protection for extended compressor life as well as better shaft sealing, reduced bearing fatigue and less unscheduled downtime.
- Avoid viscosity build up & reduced oil consumption
- Reduced lacquer and deposit formation for longer filter life and reduced shaft seal leakage
- Long oil life and reduced drain intervals and less routine maintenance
- Avoid viscosity build up & reduced oil consumption

**QUICK POINTS...**

Name: *ULTRACHEM R-PAO SERIES*

ISO Grade: *32-220 & 400*

Base: *PAO*

Additive System: *R&O*

Color: *PALE STRAW*

Food Grade: *NO*

Main Application: *REFRIGERATION*

**TYPICAL CHARACTERISTICS\*\***

PRODUCT DATA	ASTM METHOD	R-PAO 32	R-PAO 46	R-PAO 68	R-PAO 100	R-PAO 150	R-PAO 220	R-PAO 400
ISO Grade	D2422	32	46	68	100	150	220	400
Viscosity, 40 OC	D445	30	46	65	104	152	216	399
Viscosity, 100 OC	D445	5.9	7.9	10.3	14.6	19.8	24.7	39.1
Viscosity Index	D2270	148	144	146	144	150	145	146
Flash Point, OC/OF	D92	235/455	252/486	260/501	260/501	260/501	265/501	272/521
Pour Point, OC/OF	D97	-68/-90	-63/-81	-55/-67	-51/-59	-47-52	-45-49	-34/-29
Color	D1500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Acid Number, mg KOH/g	D974	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Foam Test	D892	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Copper Strip	D130	1	1	1	1	1	1	1
Rust Test	D665B	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Specific Gravity	D1298	0.83	0.83	0.83	0.83	0.84	0.84	0.85

\*\*Characteristics are typical of production. Slight variations in the actual data may occur which will not affect performance.

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### SPECIFICATIONS

- Meets the requirements of
- DIN 51503 KAA & KC
- Meets the requirements of
- FDA 21 CFR 178.3570 H-1

### SHELF LIFE

- Standard shelf life of (5) years from DOM applies to this product
- Shelf life may be extended and/or recertified upon individual case – please contact your Ultrachem, Inc. representative

### COMPATIBILITY NOTES

- Not Compatible with mineral oils and most other hydrocarbons
- Compatible with most process gases
- Compatible with most common seal materials, plastics, and paints
- Not compatible with polyalkylene glycol (PAG) lubricants

### HEALTH & REGULATORY STATEMENTS

- Classified as non-hazardous per OSHA GHS
- TSE/BSE compliant: product does not contain any materials of animal origin or derivatives
- FALCPA compliant: product does not contain any allergens
- RoHS compliant: product does not contain any EU RoHS substances
- REACH compliant: product does not contain any SVHC substances
- Guidelines on safety and storage may be found on the associated Safety Data Sheet ([SDS@ultracheminc.com](mailto:SDS@ultracheminc.com))

### PACKAGING AVAILABILITY

- 5 gallon pail (18.9 L)
- 55 gallon drum (208.2 L)
- 330 gallon tote (1249.2 L)

Please contact your Ultrachem, Inc. representative for detailed information not covered in this data sheet.



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We therefore recommend you consult a FUCHS Lubricants Co. Application Engineer to discuss application conditions and the performance criteria of the products before the product is used. It is the responsibility of the user to test the functional suitability of the product and to use it with the corresponding care.

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