UNI-TEMP™

Refrigeration Oil

ROYAL PURPLE®

Beyond Synthetic™

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Uni-Temp™ is a long life, energy-efficient, synthetic refrigeration lubricant that provides superior performance in both rotary screw and reciprocating refrigeration compressors. Uni-Temp™ is formulated with Royal Purple's proprietary Synerlec® additive technology giving it significant performance advantages. It has excellent oxidation stability to keep compressors clean while also providing greatly extended oil drain intervals. Uni-Temp™ consistently produces large energy savings when replacing other mineral and synthetic refrigeration oils*. These savings typically pay for the total cost of the oil within a few months.

In ammonia compressors Uni-Temp™ typically reduces or totally eliminates oil carryover from the compressor into the cold side of the system. It is also wax-free and remains fluid at temperatures as low as -90˚F and therefore does not congeal on the evaporator coils. Cooling efficiency is maximized and the need to shut down the system to clean the coils is eliminated.

Uni-Temp™ is recommended wherever cost savings through improved equipment utilization and reduced energy use and oil consumption is desired.

* Average energy savings after switching to Royal Purple, which was documented via a data logger in 34 ammonia compressors, was 10.11 percent.

Synerlec® additive technology makes the difference!

Synthetic oils enable Royal Purple to make superior lubricants, but it is Royal Purple's advanced Synerlec® additive technology that gives Royal Purple's lubricants their amazing performance advantages. Synerlec® additive technology truly is *beyond synthetic.*™

Synerlec® additive technology forms a tough, slippery, synthetic film on all metal surfaces. This proprietary film significantly improves lubrication: first, by increasing oil film thickness and second, by increasing oil film toughness, both of which help to prevent metal-to-metal contact. It displaces moisture from metal surfaces and protects all metals against rust and corrosion. It also fortifies the oil against the detrimental effects of heat, which causes oil to oxidize.

Uni-Temp™ 43 Note:

Uni-Temp™ 43 is not a refrigeration oil but a low temperature, high film strength, anti-wear hydraulic oil recommended for superior lubrication in subzero applications.

Performance Advantages:

- **High Film Strength**
  Uni-Temp™ contains Royal Purple's Synerlec® additive technology for maximum wear protection.
- **Saves Energy**
  Uni-Temp™ typically produces energy savings many times greater than the total cost of the oil.
- **Wax-free**
  Uni-Temp™ has no flock point and does not congeal on evaporator coils, thereby maintaining maximum cooling efficiency.
- **Reduces Oil Consumption**
  Uni-Temp™ reduces oil usage by greatly extending oil drain intervals due to its longer oil life and reducing or eliminating makeup oil requirements by lessening oil carryover into the system.
- **Improves Equipment Utilization**
  Uni-Temp™ keeps evaporator coils and expansion valves clean and improves equipment reliability and minimizes unscheduled downtime.
- **Excellent Demulsibility**
  Uni-Temp™ rapidly and completely separates from water.
- **Compatible with Other Oils**
  Uni-Temp™ is compatible with PAO and POE synthetic and mineral refrigeration oils. (It is not compatible with polyalkylene glycols.)
- **Excellent for Food Processing Plants**
  Uni-Temp™ is USDA H-2 approved and excellent for blast-freezer service.
- **Works in all Compressors**
  Uni-Temp™ is ideal for reciprocating, screw and centrifugal compressors.
- **For Use with Most Refrigerants**
  Uni-Temp™ is recommended for use with ammonia, propane, all CFC / HCFC fluorocarbon freons such as R-12, R-22, R-114, etc., but Uni-Temp™ has not been extensively tested in HFC refrigerant compressors.

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Refrigeration Oil

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	Refrigeration Grade / ISO Grade						
	43	100	150	240	300	500	multi-vis.
Typical Properties*	7	22	32	46	68	100	32/68/100
Viscosity							
cSt @ 40˚C	7.0	22.0	32.0	46.0	68.0	100.0	72.7
cSt @ 100˚C	2.2	4.4	5.7	7.2	9.5	13.2	10.7
SSU @100˚F	50	115	165	237	351	516	373
SSU @ 210˚F	34	41	46	51	59	73	63
Viscosity Index	85	107	118	118	118	130	122
Flash ˚F	345	420	445	450	445	445	460
Fire ˚F	360	470	520	490	540	540	550
Pour Point ˚F	-90	-90	-90	-90	-90	-90	-70
ISO 4406 Cleanliness Level	N/A	**	**	**	14/13/11	N/A	N/A
Acid Number	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aniline Point							
˚F	198	232	245	253	261	261	261
˚C	92	111	118	122	127	127	127
Moisture, ppm	<25	<25	<25	<25	<25	<25	<25
Dry Air Oxidation							
312 hrs. @ 250 ˚F,							
% viscosity increase	0.92	0.68	0.86	0.90	0.95	0.97	0.99
Corrosion							
Copper	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Bronze	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Rust Test (Ferrous Metal)							
Fresh Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Salt Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Timken OK Load, Lbs.	60	60	60	60	60	60	60
Rotary Bomb Oxidation, Min.	2570	2560	2580	2590	2578	2580	2518

*Properties are typical and may vary

**Check with manufacturer concerning 14/13/11 cleanliness availability

Note: The solvency of Uni-Temp® cleans oil oxidation deposits left by previous oils. Additional high capacity inline oil filtration may be required during clean up of dirty systems. For more information and to learn about clean up options prior to the oil change, contact Royal Purple's technical support group at 281-354-8600.