

ANDEROL[®]

S-Series Rotary Compressor Lubricants



The Optimum Balance Between Cost and Performance

Compressor Lubricants Formulated for the New Millennium and Beyond



ANDEROL[®]
Specialty Lubricants

Anderol® S-Series Compressor Lubricants

At Last - High Performance Compressor Oils at Competitive Prices

- ❑ **Lower Cost**
- ❑ **Proven Technology**
- ❑ **Energy Saving**
- ❑ **Synthetic-Grade Protection for your Expensive Equipment**

Finally, the rotary compressor lubricants for which you have been waiting are here!

Anderol S-Series compressor lubricants offer the most desirable characteristics of premium synthetics at a significant cost savings. They are formulated from synergistic blends of severely hydrotreated, hydrocracked base oils, enhanced with premium quality synthetic esters and proven additive technology.

They lubricate rotary compressors better than mineral oils, at both high and low temperatures, with drain intervals up to 8000 hours, or at least four times longer.

Fourty years ago, we pioneered the development of Anderol synthetic lubricants - today's standard for air compressors. Since then, our compressor oils have logged over 3 billion operating hours in compressors of all types. Only Anderol has the technical expertise and experience to create this most important breakthrough in compressor lubrication - Anderol S-Series.

The compressor oils of the 21st Century, solving the challenges of today!

Anderol® S-Series Lubricants Typical Properties

Property	Test Method	S-32	S-46	S-68	S-100
ISO Grade		32	46	68	100
Viscosity @ 40°C, cSt	ASTM D 445	31.8	49	66.2	95.5
Viscosity @ 100°C, cSt	ASTM D 445	6.0	8.1	10.2	13.8
Viscosity Index		140	136	141	134
Pour Point (°C)	ASTM D 97	-35	-34	-32	-30
Flash Point (°C)	ASTM D 92	240	240	240	246
Specific Gravity (15.6°C)	ASTM D 1298	0.85	0.85	0.86	0.86
TAN, mg KOH/g	ASTM D 974	0.11	0.11	0.11	0.11
Demulsibility (54°C, ml) Oil/water/emulsion (minutes)	ASTM D 1401	40-40-0 (10)	40-40-0 (10)	40-40-0 (10)	40-38-2 (<30)
Copper Corrosion (3 hrs @ 100°C)	ASTM D 130	1a	1b	1b	1a
Four Ball Wear Scar (mm) 1200 rpm, 40 kg, 75°C, 1 hr	ASTM D 2266	0.50	0.50	0.50	0.50



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Check the Advantages of Anderol S-Series over Mineral Oils:

Superior Lubrication and Cooling Properties

- Exceptionally pure base stocks
- Excellent thermal and oxidative stability
- High temperature shear stability
- Low volatility for longer life
- Excellent heat transfer properties
- Good demulsibility and foaming resistance
- Excellent high/low temperature performance

Performance Benefits

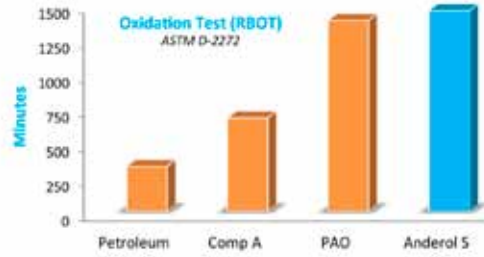
- Eliminate seasonal oil changes
- Superb deposit and sludge control
- Compressors run cooler
- Substantial power saving over conventional mineral oils (up to 4%)
- Maintenance costs reduced
- Drain intervals extended
- Extended lifetime of an additional 2000 hours over conventional oils

Materials Compatibility

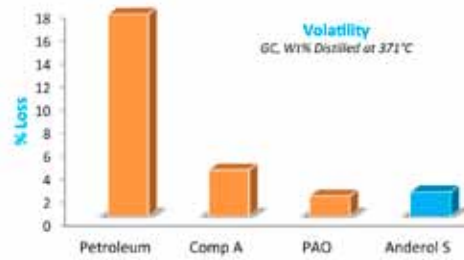
- Completely compatible with mineral oils
- Compatible with elastomers and paints recommended for use with mineral oils
- Completely compatible with most synthetics, including PAOs, and esters

Other Applications

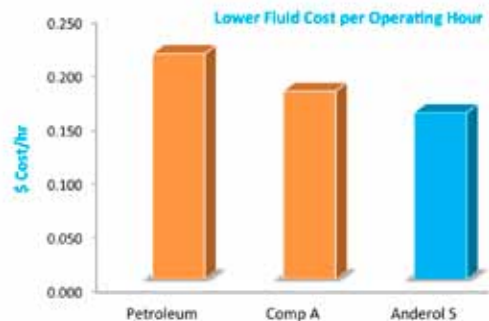
May be used in hydraulic, gear and bearing, and circulating systems.*



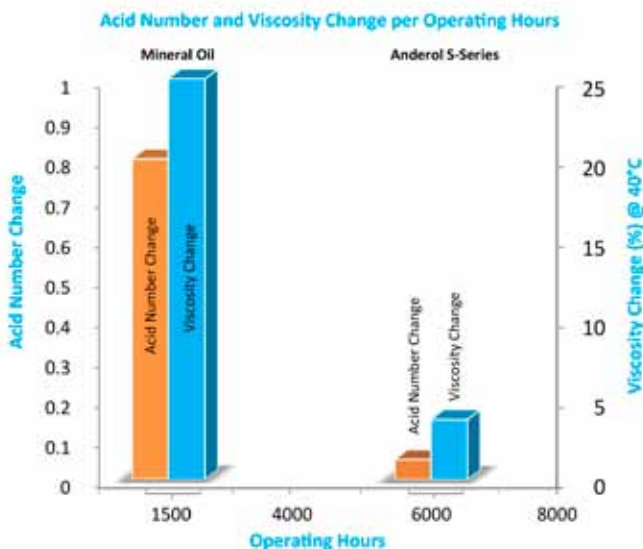
The primary cause of degradation is oxidation. S-Series is much more oxidation-resistant than petroleum oils.**



The volatility of S-Series lubricants practically matches that of more expensive Synthetics.**



Compared to PAO, Anderol S-Series lubricants can shave 30-40% points from lubricant costs.**



* Consult your ANDEROL account manager or distributor for details.

** Figures based on results of field study.

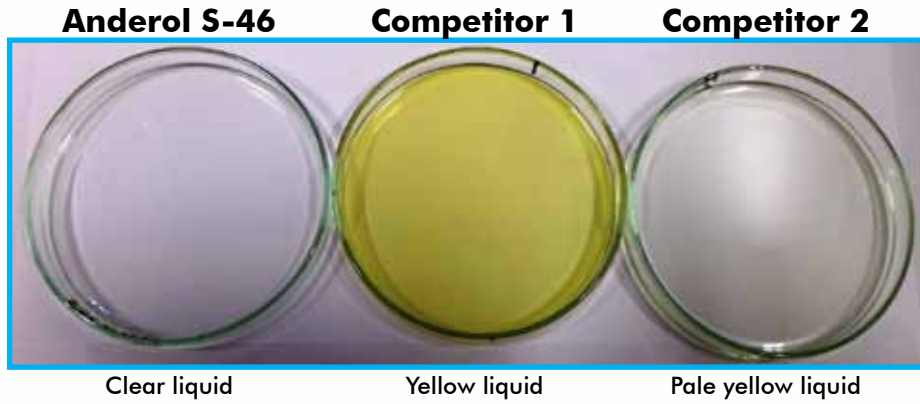


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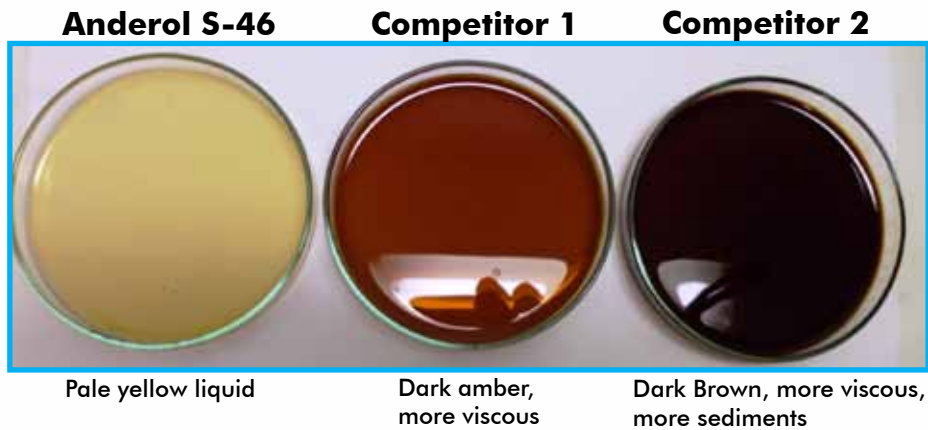
Oil Ageing at 220°C in petri-scale

Thermal stability and deposit tendency of various lubricants were investigated. Samples were placed into a tarred Petri dish into an oven at 220°C. Color / appearance and weight change were observed.

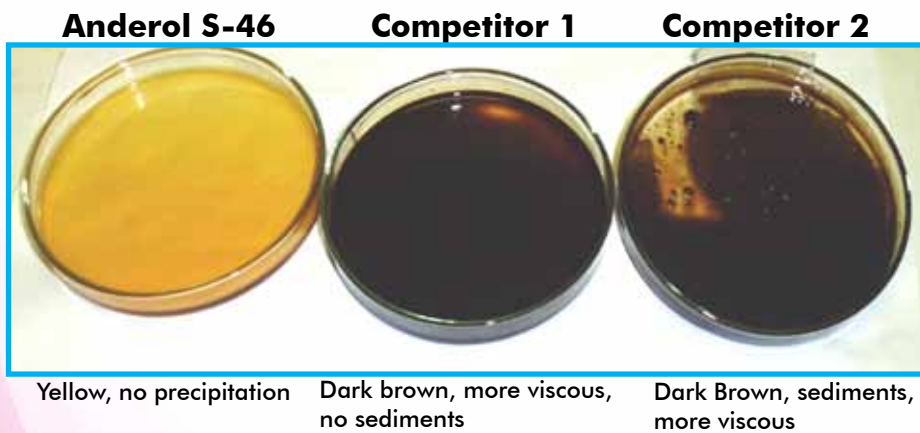
Fresh oil:



Appearance after 4 hours:



Appearance after 8 hours:



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Appearance after 12 hours:



Dramatic color changes were observed in both competitors samples within the first ½ hour of analysis. This continued for both the competitors samples 1 and 2, throughout the 12-hour testing period. In the 8-hour and 12-hour period a more viscous sample with sediments was observed in the Competitor 2 sample. For the competitor 1 sample in the 12-hour period a color change was observed from Dark Brown to Black.

The Anderol S46 sample the color variation was only slight compared to the competitors samples.

Time Period	Fresh oil samples	½ hour	1 hour	2 hours	3 hours	4 hours
Sample						
Anderol S-46	10.00 g	9.62 g = 3.8%	9.19 g = 8.1%	8.58 g = 14.2%	8.15 g = 18.5%	7.79 g = 22.1%
Competitor 1	10.00 g	9.13 g = 8.7%	8.33 g = 16.7%	7.48 g = 25.2%	7.11 g = 28.9%	6.81 g = 31.9%
Competitor 2	10.01 g	9.63 g = 3.8%	9.09 g = 9.2%	8.27 g = 17.4%	7.84 g = 21.7%	7.41 g = 26.0%

At high operating temperatures, tend to evaporate highly volatile component causing the viscosity to increase and oil mist pollution of the compressed air.

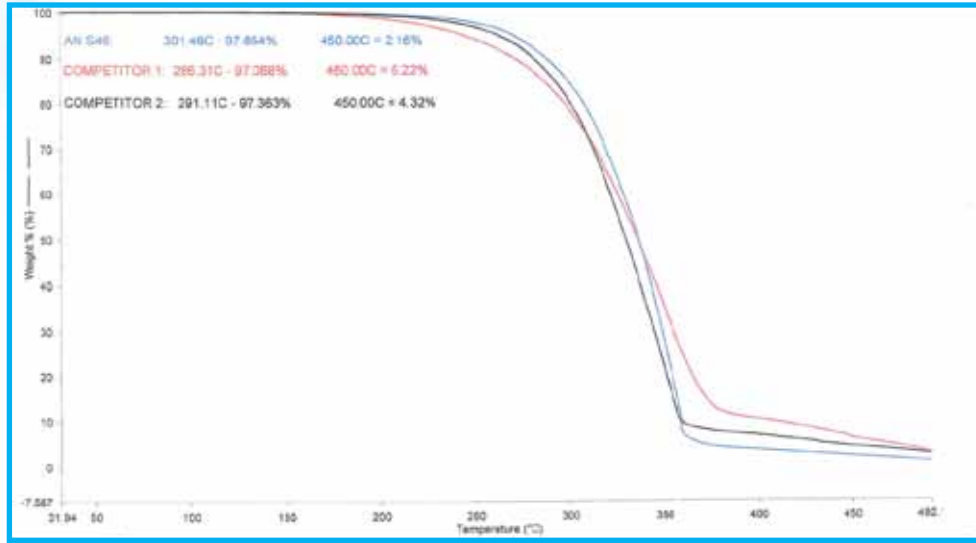
The competitor's amount of evaporation is noticeably higher.

This test shows that the ANDEROL S 46 is more thermal stable and has a higher resistance towards oxidation.



Thermo Gravimetric Analysis (TGA)

TGA is an analytical method in which the change of weight will be measured in function of the temperature. The technique material characterization, weight loss or gain due to the presence of light exhibit molecular groups, degradation, oxidation, drying out.

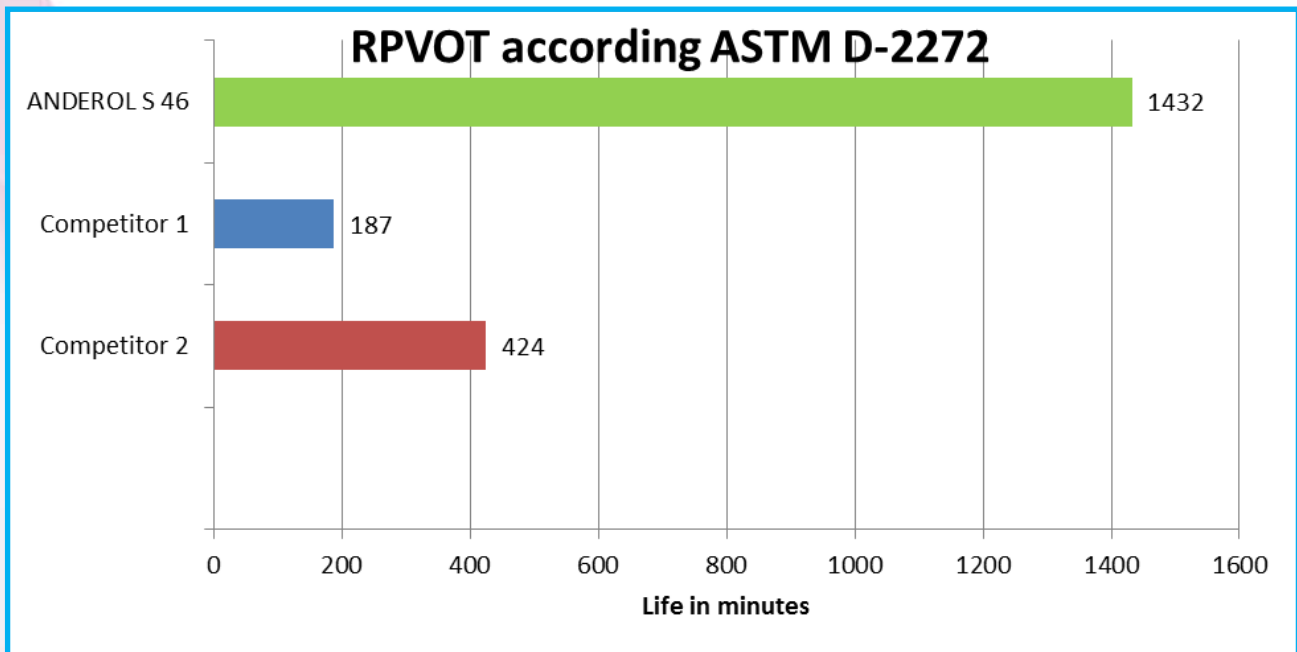


Above graph illustrates that ANDEROL S-46 is stable at high temperatures. Significantly important is the content of oxidation products forming with ANDEROL S-46 is much lower compared to the competitors, leading to cleaner machinery conditions. The deposit formation of the competitors is double or even triple the amount in comparison to ANDEROL S-46.

This simulates how clean ANDEROL S-46 is lubricating the machinery.

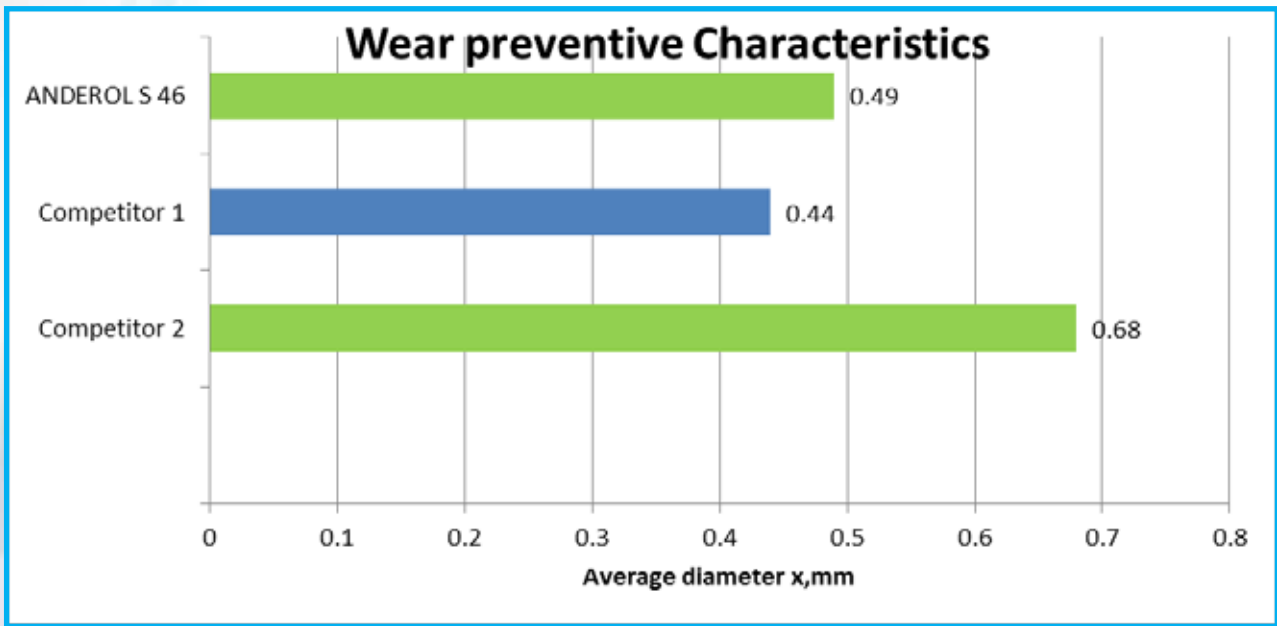
RPVOT ASTM D 2272

This test comprehends determination of the oxidative stability of oil by subjection to extreme oxidation conditions. The oils are exposed to oxygen in the presence of a copper catalyst, in 150 °C water and turning to 100 rpm. A very informative test to compare different types of lubricants. The longer the time, the higher the oxidative stability.



Four ball wear ASTM D 4172

This test method is used to determine the relative wear preventive properties of lubricating fluids. It gives an indication of the lubricant film strength. This leads to a high level of protection of the machine and a good lubrication.



High Temperature Deposition Test



Our advanced lubrication and additive technology has enabled us to create a unique product that rivals the qualities of jet turbine lubricants. The highly sophisticated High Temperature Deposition Test is required for military and civilian jet oils around the world; the better the lubricant, the smaller the amount of lacquer deposited on the steel rods. Note that the rod testing S-Series Lubricant is almost totally clean!



Contact ANDEROL® Company Today!

ANDEROL® Company provides single source supply of the highest grade lubricants in the industry.

Our marketing and technical professionals stand ready to assist you with your specific applications. For additional information on any of our products, call or fax us today at the numbers listed below. Technical data on all of our lubricants, including published results of ASTM testing vs. competitive products, are available upon request.



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ISO 9001 REGISTERED

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