



# Industrial Air Compressor Lubricants, What Effects the Life of your Lubricant?

Whether you are a distributor or an end-user of industrial compressor lubricants, getting the right compressor oil is essential to the equipment life, operating efficiency and up-time optimization. With so many options from which to choose, how can you be sure you are: 1.) getting the right product, and 2.) getting the best performance. Here's a few things to consider when analyzing the performance of lubricants and establishing oil sampling program intervals.

1. DISCHARGE TEMPERATURE - Any fluid's service life is halved for every 20F increase in discharge temperature above 190F
2. AMBIENT - Environmental conditions (chemicals, dust) most certainly affects the life cycle change frequency
3. CONDITION OF THE COMPRESSOR - Sludge/varnish build-up
4. CONDITION OF OLD OIL AT TIME OF CHANGE OUT (acidity, dirty)
5. MAINTENANCE PRACTICES (proper oil level, filter and separator changes)
6. OPERATING TEMPERATURE

## *Factors that Contribute to Degradation of a Lubricant*

### **Oxidation**

- Oxidation will cause a lubricant to degrade in service by a thermally induced reaction with oxygen
- The process will speed up by heat, light metal catalysts and the presence of water, acids and solid contamination
- Oxidation is a chain reaction. So the further it progresses the more rapid it becomes
- Oxidation will increase viscosity and cause the formation of acids and sludge. All which can effect operation and even the life of the compressor

### **(TAN)Total Acid Number**

- (TAN)Total Acid Number is a measure of the amount of alkaline necessary to neutralize the inorganic acids present within the oil.
- A (TAN) test should not be confused with a pH test. Although acids are being produced by the oxidation process, it is not significant enough to alter the oils pH level.
- Range of TAN Results
- TAN = <0.1 = Indicates a new fluid
- TAN = 2.0 = Condemning Limit

## Demulsibility

Demulsibility is a measurement of a fluid's ability to separate from water. A fluid with good demulsibility (40/40/0) @ 40C should readily separate from water, resulting in clear distinctly separate layers of oil and water.

- A fluid with poor demulsibility will not easily separate from water often resulting in cloudiness in both the oil and water layers.
- Cloudiness in water layer can also indicate possible additive drop out (typically rust inhibitor)

## Carbon and Varnish Control

- Lubricants with excellent carbon and varnish control lead to cleaner operations, and lower repair costs
- POE, Diester, and PAG based compressor fluids exhibit good carbon and varnish control
- Carbon and Varnish will cause compressor discharge temperature to rise

## Compatibility

*Signs of incompatibility can include:*

- Combined fluids become murky
- Incompatible fluids can cause foaming
- Fluids can turn to jell and become very thick

## WHAT YOU CAN DO

Look for lubricants that have been formulated to withstand the high temperatures and pressures of air compressors:

- > Longer fluid life up to 12,000 hours at 200F
- > Great resistance against water contamination
- > Compatible fluids available for all OEM, and most aftermarket compressor fluids
- > No flushing required
- > Top off compatible
- > Enhanced cleaning properties
- > Resistance against carbon and varnish formation
- > Reduced downtime, maintenance, which reduce costs
- > Excellent protection against wear

**Contact Us For More Information.**