Lubricants Testing Services

AGAT Laboratories

Compressor

Equipment Reliability and Lubricants Testing Services

Compressors come in all designs; rotary piston, axial flow, centrifugal, helical screw and rotary vane. They are used to process gases of all kinds, such as chlorine, sulphur dioxide, hydrogen chloride and natural gas, as well as maintaining air compressor reservoirs. Some compressors are used to process gases that react negatively to lubricants, so great care must be taken when selecting and using compressor lubricants. Lubricant types selected for compressors depend upon four important considerations; the compressor type, the gas being processed, discharge pressure and the discharge temperature. Three further considerations must be taken into account; the oxidation and foaming resistance of the lubricant, as well as the oils ability to prevent the formation of carbon deposits at discharge valves.

Synthetic lubricants are generally recommended and these include polyalphaolefin, diester, polyglycol and polyolesters, depending upon the compressor type and gases being processed. When compressing chemically active gases such as oxygen, hydrogen chloride or chlorine, mineral based oils and synthetic hydrocarbon polyalphaolefins must NEVER be used for reasons of safety.

Finally, consideration must be given to the types of seals used in compressors, because the process gasses or the lubricants used may not be compatible.

A lubricant testing program that should be part of a regularly scheduled condition based monitoring program should include the following oil analysis:

- Kinematic Viscosity
- Spectrographic Analysis (wear metals, additives and contaminants)
- ISO Particle Count
- Acid Number
- Physical Properties
- Oxidation by FTIR
- Water content by Karl Fisher (Add when water contamination is a serious concern)
- Recommended Lubricant Testing package 30-403