QUALITY LUBRICATES.

Anderol® RCF-P 68 (FG) in large-scale refrigeration facilities

Large scale refrigeration facilities rely on refrigeration compressor lubricants that are compatible and non-miscible with the refrigerant. Ammonia is a widely used refrigerant for industrial installations. Anderol® RCF-P 68 (FG) is compatible with ammonia and offers optimized machine efficiency and reliability, clean lubrication and low oil consumption. **anderol.com**

Anderol®

QUALITY WORKS.

LANXESS
Energizing Chemistry

ANDEROL® RCF-P 68 (FG)

CASE STUDY

Large scale refrigeration facilities

Industrial refrigeration is a specialized industry that deals with cooling and deep freezing of food and beverages, pharmaceuticals or chemical manufactured products that require temperature control.

The refrigeration compressor is the heart of the refrigeration system. In cooling and deep freeze refrigeration systems, a low performance or even breakdown can be costly. Hence it is important to ensure it works with the highest efficiency and the least amount of downtime while keeping maintenance and operation costs low.

Ammonia as a refrigerant

Original equipment manufacturers (OEMs) are paying increased attention to two "natural" refrigerants, ammonia (R717) and carbon dioxide (R744, CO2).

Ammonia is one of the most efficient refrigerants and a 3-10% more efficient than CFC's. An ammonia-based system requires less electricity, resulting in lower operation costs, and ammonia itself is safe for the environment with an Ozone Depletion Potential and a Global Warming Potential of 0.

Ammonia is an increasingly popular alternative refrigerant to environmentally harmful hydrofluorocarbons.

Compatibility and low miscibility are key

The lubricant selected for a refrigeration system compressor must be suitable for the type of compressor and have the appropriate miscibility and solubility characteristics with ammonia.

The large-scale refrigeration facilities used in industrial refrigeration are using refrigerants and are fitted with oil separators as the lubricant is meant to stay in the compressor element. It is important to use a lubricant that is completely non-miscible with the coolant, and one with a low vapor pressure to avoid or minimize oil entrainment into the circuit.

Anderol® RCF-P 68 FG

Anderol® RCF-P 68 (FG) is one of these suitable lubricants. It is a pure synthetic PAO-based lubricant, that has impressive resistance to mechanical stress and excellent performance with refrigerants working at very low evaporation temperatures.

The product benefits from an extremely low pour point and has excellent low-temperature flowability. Formulated for reciprocating and rotary compressors, the lubricant offers excellent lubricating properties, high film strength and very low vapor pressure which makes it very suitable in these refrigeration systems with high pressure and very low evaporation systems.

The lubricant is especially compatible with ammonia. The solubility and miscibility with ammonia are very low, so its viscosity does not decrease under pressure in the compressor, and oil leaks in the compressor shaft seals are minimized.

Importantly, it has excellent resistance to thermal stress and oxidation and high chemical stability, providing cost benefits through extended oil change intervals, fewer filter changes, and a reduction in compressor maintenance costs.

Anderol® RCF-P 68 FG is suitable for food grade environments such as- cold food storage, dairy processing, and beverage production. Anderol® RCF-P 68 is meant for industrial applications such as ice rinks, heavy industry and large-scale cooling systems.

Compatibility with other refrigerants

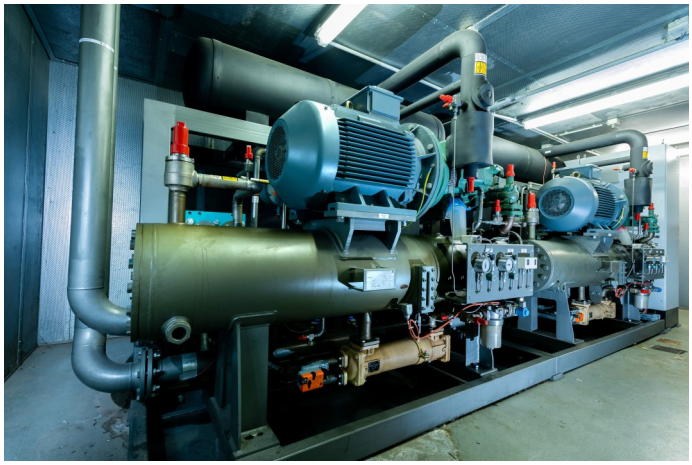
Anderol® RCF-P 68 (FG) has been particulary successful in systems using ammonia as refrigerant, but it is compatible with most common refrigerants (except sulphur dioxide). Anderol® RCF-P 68 (FG) can be used with R723 (a mixture of 60% ammonia and 40% dimethyl ether), CO2, propane, and propylene (R1270).

ANDEROL® RCF-P 68 FG

SUCCESS STORY

The situation

We recently successfully implemented the RCF-P 68 FG in two different companies in Spain.



Customer A, a company for deep frozen vegetables was using a synthetic hydrocarbon lubricant in their cooling compressors with a pour point of - 48°C. The company noticed that residues were formed in the compressor housing.

Customer B, another company for deep frozen food products was using a mineral oil based lubricant especially for ammonia refrigeration. The problem that occurred was that waxy residues where formed in the compressor crankcase. This resulted in operational stops of the compressor. The problem became even worse during the hot season, when the compressors have to work harder to maintain the same cooling temperature.

The solution

Both customers replaced their lubricant with Anderol® RCF-P 68 FG, an ISO 68 synthetic PAO based lubricant, especially designed for compressor systems using refrigerants such as ammonia and carbon dioxide, where incidental food contact may occur. Anderol® RCF-P 68 FG is based on a mixture of specially selected non-toxic synthetic PAO combined with a high performance additive technology.

The result

Both companies noticed that the lubricant remains significantly cleaner, and continues to be a pure liquid and without waxes and residues after many operating hours.

Another positive effect was the higher reliability and efficiency in the installations. Subjected to be due to the low pour point of –54°C.

- Optimized machine efficiency and reliability
- No residues, cleaner lubrication
- Lower oil consumption

Anderol BV
Groot Egtenrayseweg 23
5928 PA Venlo
The Netherlands

www.anderol.com
info@anderol.com
+31 (0)77 396 0340

North America
+1 833 LANXESS
customer.care@lanxess.com

South & Central America
+55 19 3522 5083
atendimento.cliente@lanxess.com

Asia Pacific
+86 21 6109 6666
Orders.apac@lanxess.com