

REFLO™ SYNTHETIC 68A

LOW TEMPERATURE AMMONIA

REFRIGERATION COMPRESSOR FLUID

Introduction

Petro-Canada's REFLO™ SYNTHETIC 68A is a full synthetic polyalphaolefin/alkyl benzene based ammonia refrigeration compressor fluid used in industrial refrigeration systems. REFLO SYNTHETIC 68A is formulated to outperform solvent refined paraffinic and naphthenic refrigerant oils by extending service life and thereby helping to significantly reduce operating costs. REFLO SYNTHETIC 68A is specifically formulated to outperform straight polyalphaolefin refrigeration compressor fluids by offering better seal performance, while maintaining excellent foam control and deposit formations. The result is a refrigeration compressor fluid that offers reliable, long-term performance with the potential for significant operational cost savings as part of a proper maintenance system.

Superior Performance Benefits

- **Extreme low temperature performance**
 - REFLO SYNTHETIC 68A is completely wax free and can operate at temperatures well below conventional mineral oils.
 - Excellent operation at low evaporator temperatures.
 - None of the wax deposit problems associated with paraffinics when used at very low temperatures.
- **Lower oil volatility reduces fluid consumption and maintenance costs**
 - Significantly less volatile than solvent refined paraffinics or naphthenics at high temperatures
 - Results in less oil carryover to the refrigeration system's low temperature side
- **Lower oil carryover also reduces plugging and deposit formation in evaporators, which helps to lower maintenance costs**
- **Lower solubility in ammonia improves system efficiency and performance**
 - REFLO SYNTHETIC 68A is less soluble in ammonia refrigerant than solvent refined paraffinics and naphthenics
 - Less ammonia is absorbed into the compressor fluid, which can reduce gas entrainment in separator tanks and increase system efficiency
 - Lower concentrations of ammonia in the fluid allows it to maintain viscosity, so it lubricates better, reducing wear
 - Less compressor fluid is absorbed into the ammonia, reducing the potential for fluid to block piping, valves and filters
 - Lower concentration of compressor fluid in the ammonia also helps to maintain refrigerant purity, improving system efficiency and performance
- **Superior thermal and oxidation stability extends fluid life, which helps to reduce maintenance costs and downtime**
 - Resistance to oxidative and thermal breakdown guards against oil thickening, deposit and sludge formation
 - Helps to keep the compressor, heat exchanger and expansion valves operating at their design efficiency and performance standards
 - Extends fluid life, even in the presence of impurities in the ammonia refrigerant, helping to save on downtime and change-out costs

Additional Performance Benefits

- High viscosity index ensures proper lubrication and protection from wear and viscosity change over a wide range of operating temperatures
- High flash point ensures safe operation at elevated temperatures
- Excellent seal, paint and plastic compatibility.

Applications

REFLO SYNTHETIC 68A is formulated to lubricate ammonia refrigeration compressors used in large commercial operations such as cold stores, marine systems and food processing plants; specifically blast freezers that have very low evaporator temperatures. REFLO SYNTHETIC 68A is also used in manufacturing industries that require very low temperature control, such as pharmaceuticals and microelectronics. REFLO SYNTHETIC 68A can be used in ammonia refrigeration systems where evaporator temperatures are greater than -51°C (-60°F).*

Although REFLO SYNTHETIC 68A is compatible with most paraffinic mineral oils, the full benefits of REFLO SYNTHETIC 68A will not be realized without a complete fluid change-out.

Please be advised that REFLO products are not recommended for top-up on pre-existing refrigeration compressor fluids with different chemistries. For example, REFLO Synthetic should not be mixed with naphthenic or aromatic type fluids. Doing so results in increased risk of seal damage/leaks and reduce performance.

REFLO SYNTHETIC 68A is formulated to have good compatibility with seal materials; it contains a seal swell agent to help minimize fluid leaks. REFLO SYNTHETIC 68A is compatible with materials such as NBR, SBR, CR, NR, MVQ.

*These are recommended minimum evaporator temperatures based on our products' typical pour point. It is important to refer to your operating manual and follow suggested OEM instructions. It is not recommended to operate at evaporator temperatures cooler than the pour point of the compressor oil as waxing / flocking may occur.

Typical Performance Data

PROPERTY	ASTM Test Method	DIN Test Method	REFLO Synthetic 68A
Density, kg/L @ 15 °C	D4052	-	0.841
Viscosity, cSt @ 40 °C			61.8
cSt @ 100 °C	D445		8.9
SUS @ 100 °F	D2161		318
SUS @ 210 °F			56.2
Viscosity Index	D2270		119
Pour Point, °C/°F	D5950	51597	-54 / -65
Flash Point, °C/°F	D92	51376	245 / 473
Foam Characteristics, ml	D892	51566	
Sequence 1			0 / 0
Sequence 2			10 / 0
Sequence 3			0 / 0
Total Acid Number (TAN), mg KOH/g	D664	51558	<0.1
Specific Heat, Calories/g/°C, 38 °C	-	-	0.4723
BTU/lb, 100 °F	-	-	0.4723

The values quoted above are typical of normal production. They do not constitute a specification.

To order product or to learn more about how Petro-Canada Lubricants
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