PETRO-CANADA LUBRICANTS

A HOLLYFRONTIER BRAND

TECH DATA

REFLO™ A

AMMONIA REFRIGERATION COMPRESSOR FLUID

INTRODUCTION

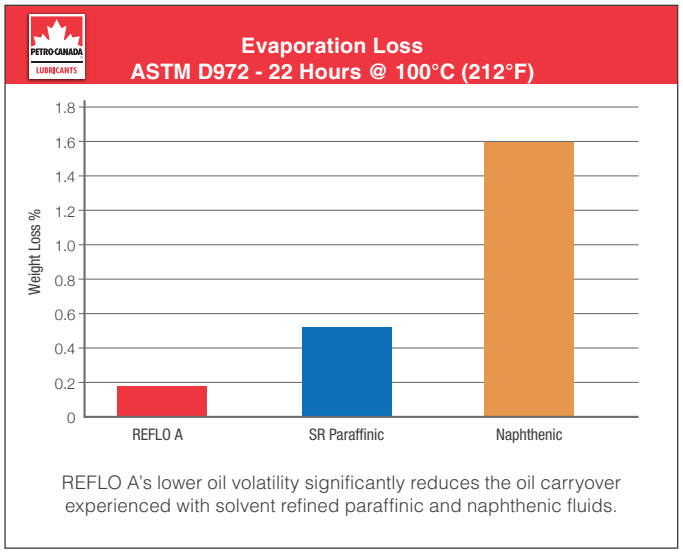
Petro-Canada's REFLO A is an ammonia refrigeration compressor fluid used in industrial refrigeration systems. REFLO A is formulated to outperform solvent refined paraffinic and naphthenic refrigerant oils by helping to extend service life thereby helping to reduce operating costs.

REFLO A's performance results from more than 25 years formulating experience. Using the HT purity process, Petro-Canada produces 99.9% pure base oils – among the purest in the world. Virtually free of impurities that can hinder fluid performance; these crystal clear base oils are fortified with specialty selected additives. The result is a refrigeration compressor fluid that offers reliable, long-term performance with the potential for significant operational cost savings.

FEATURES AND PERFORMANCE BENEFITS

Lower oil volatility reduces fluid consumption and maintenance costs

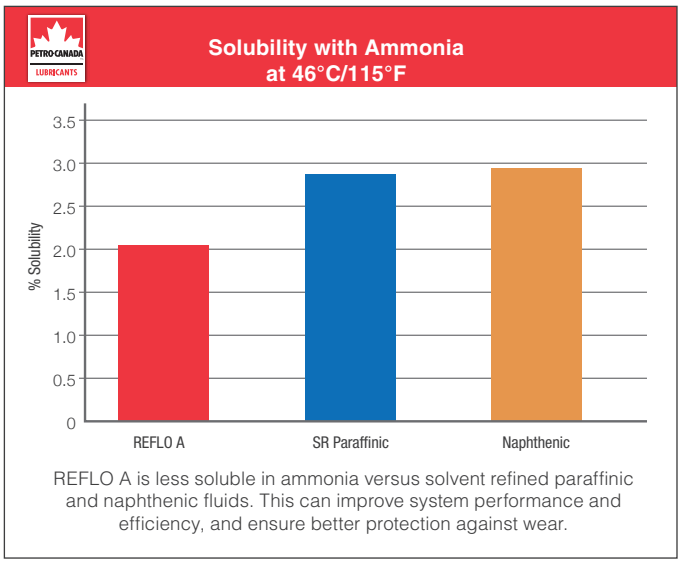
- Significantly less volatile than solvent refined paraffinics or naphthenics at high temperatures
- With proper change-out procedures, may result in reduced oil carry-over and lower fluid consumption.
- Lower oil carryover also reduces sludging and deposit formation in evaporators, lowering maintenance costs



REFLO A's lower oil volatility significantly reduces the oil carryover experienced with solvent refined paraffinic and naphthenic fluids.

Lower solubility in ammonia improves system efficiency and performance

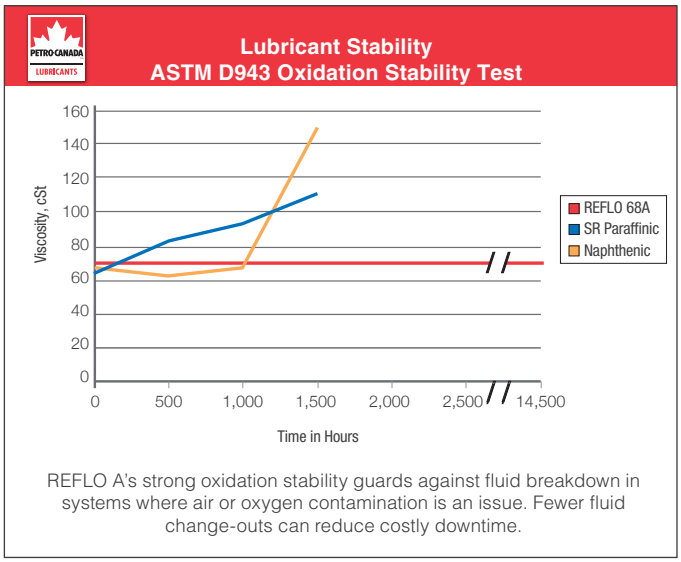
- REFLO A is less soluble in ammonia refrigerant than solvent refined paraffinics and naphthenics
- Less ammonia is absorbed into the compressor fluid, which can reduce foaming in separator tanks and increase system efficiency
- Lower concentrations of ammonia in the fluid allows it to maintain viscosity, 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 concentrations of compressor fluid in the ammonia also help to maintain refrigerant purity, improving system efficiency and performance



REFLO A is less soluble in ammonia versus solvent refined paraffinic and naphthenic fluids. This can improve system performance and efficiency, and ensure better protection against wear.

Excellent thermal and oxidative stability extends fluid life, helping to reduce maintenance costs and downtime

- Excellent resistance to oxidative and thermal breakdown guards against oil thickening, deposits 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, saving on downtime and change-out costs



REFLO A's strong oxidation stability guards against fluid breakdown in systems where air or oxygen contamination is an issue. Fewer fluid change-outs can reduce costly downtime.

ADDITIONAL PERFORMANCE BENEFITS

- High viscosity index ensures proper lubrication and protection from wear over a wide range of operating temperatures
- High flash point ensures safe operation at elevated temperatures

APPLICATIONS

REFLO A is formulated to lubricate ammonia refrigeration compressors used in large commercial operations such as cold stores, food processing plants, marine systems and ice arenas. REFLO A is also used in manufacturing industries that require low temperature control, such as pharmaceuticals and microelectronics. REFL0 A can be used in ammonia refrigeration systems where evaporator temperatures are greater than -39°C (-38°F)*.

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

Most OEM's use Neoprene® (Polychloroprene), HSN (Highly Saturated Nitrile) or BUNA N (Nitrile) seals, and REFLO A fluids are fully compatible with these types of materials. However, when a compressor is converted from one oil formulation or type to another, there is always a risk of seal swell or shrinkage. Unlike naphthenic fluids or fluids derived from aromatic chemicals such as alkyl benzenes, REFLO A fluids cause little or no seal swell and hence should not be considered compatible for top-up with these fluids. Although tightening flanges can sometimes correct minor leaks, we advise that new seals should be retrofitted during the oil conversion. Follow the OEM's seal recommendation for hydrotreated paraffinic oil.

® Neoprene is a registered trademark of the Dupont Corp

"*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."

OEM APPROVED

REFLO A is approved or meets the requirements of most major compressor OEM's, including:

- Bitzer
- Frigoscandia
- Grasso
- Howden
- Huppman
- Sullair
- Vilter
- Mayekawa/Mycom (Screw Compressors)

Please be advised the REFLO products are not recommended for top-up on pre-existing refrigeration compressor fluids with different chemistries. For example, REFLO A, XL (paraffinic) and Synthetic (PAO) should not be mixed with naphthenic or aromatic type fluids. REFLO CFC is a naphthenic fluid and should not be mixed with paraffinic fluids. Doing so results in increased risk of seal damage/leaks and reduced performance.

FOOD INDUSTRY APPROVED

- NSF H2 registered
- Acceptable for use in food processing facilities in Canada where there is no possibility of food contact.

NSF®
Nonfood Compounds
Program Listed H2

TYPICAL PERFORMANCE DATA

Property	ASTM Test Method	DIN Test Method	REFLO	
			46A	68A
Density, kg/L @ 15°C	D4052	–	0.860	0.866
Viscosity, cSt @ 40°C cSt @ 100°C SUS @ 100°F SUS @ 210°F	D445 D2161	51550	 46 6.9 237 49	 58 7.9 268 52
Viscosity Index	D2270	–	106	101
Pour Point, °C / °F	D5950	51597	-42/-44	-42/-44
Flash Point,°C / °F	D92	51376	222/372	236/457
Foam Characteristics, mL Sequence I Sequence II Sequence III	D892	51566	 0/0 10/0 0/0	 0/0 10/0 0/0
Total Acid Number (TAN), mg KOH/g	D664	51558	0.05	0.05
Specific Heat, Calories/g/°C, @ 38°C BTU/lb, @ 100°F	 – –	 – –	 0.47 0.47	 0.47 0.47

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

Learn more about us: **lubricants.petro-canada.com**
Contact us: **lubecsr@hollyfrontier.com**

Committed to the disciplined operation of our business.

CERTIFIED
ISO 9001: 2015
ISO 14001: 2015
IATF 16949: 2016

Petro-Canada Lubricants Inc.
2310 Lakeshore Road W. Mississauga, Ontario, Canada L5J 1K2
lubricants.petro-canada.com

IM-7861E (2013.08)