

PURITY™ FG COMPRESSOR FLUIDS

Introduction

Petro-Canada's PURITY™ FG Compressor Fluids are formulated with SynFX™, an advanced additive technology designed to deliver synthetic-like performance and long lasting protection.



As conditions in food plants become more demanding, so must the lubricants that keep the equipment running. Wet/humid processing environments, high air volume, and high discharge temperatures are just some of the challenging service conditions compressor oils must endure.

PURITY™ FG's outstanding performance results from more than 30 years formulating experience.

Using the HT Purity Process, Petro-Canada produces a 99.9% pure, crystal clear base oil – among the purest in the world.

Virtually free of impurities that can hinder performance and fortified with specially selected performance additives, PURITY FG Compressor Fluids provide outstanding resistance to oxidation.

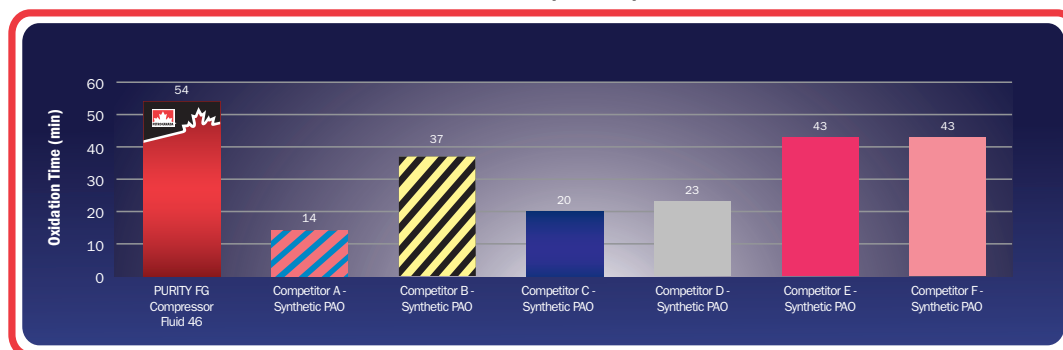
PURITY FG Compressor Fluids also meet the highest food industry safety standards and can be easily integrated into HACCP (Hazard Analysis and Critical Control Point plans and GMP (Good Manufacturing Practice) programs. All fluid components comply with U.S. FDA 21 CFR 178.3570 Lubricants with incidental food contact. All fluids are H1 registered by NSF. They are certified Kosher and Halal.

What is the HT difference?

Petro-Canada Lubricants starts with the HT purity process to produce water-white, 99.9% pure base oils. The result is a range of lubricants, specialty fluids and greases that deliver maximum performance for our customers.

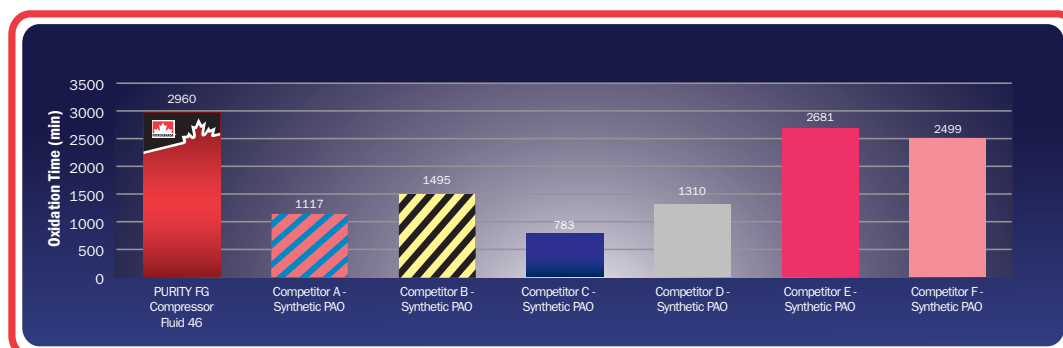


Resistance to Oxidation Pressure Differential Scanning Calorimetry, 200°C (392°F)



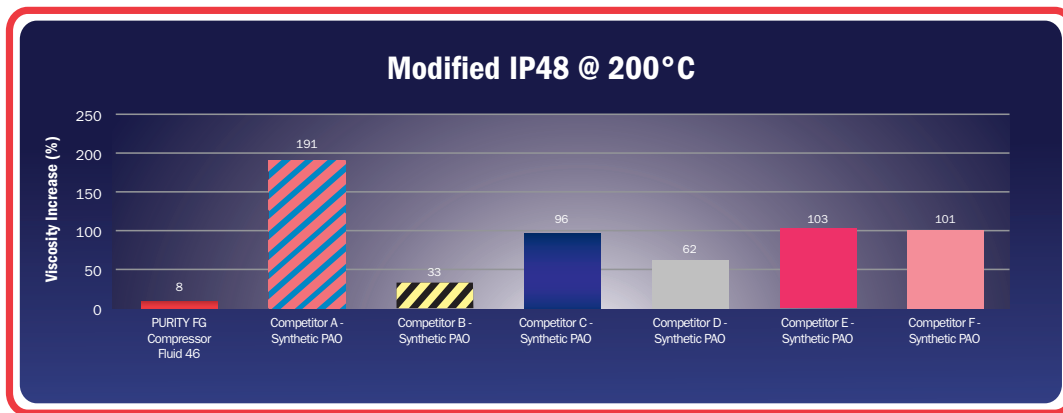
PURITY FG Compressor Fluids provide outstanding resistance to oxidative breakdown, caused by exposure to air at high discharge temperatures.

Resistance to Oxidation Rotating Pressure Vessel Oxidation Test, ASTM D2272



PURITY FG Compressor Fluids provide outstanding resistance to oxidative breakdown, making them more durable for use in severe applications.

**Fluid thickening with oxidation
IP48/97 (modified) Oxidation test for 24 hours
200°C (392°F)**



PURITY FG Compressor Fluids show minimal oil thickening,
which can improve compressor efficiency.

Food Grade Registrations

- **Fully registered for use in and around food processing areas**
 - ISO 21469 certified
 - H1 registered by NSF
 - All fluids components comply with U.S. FDA 21 CFR 178.3570 Lubricants with incidental food contact



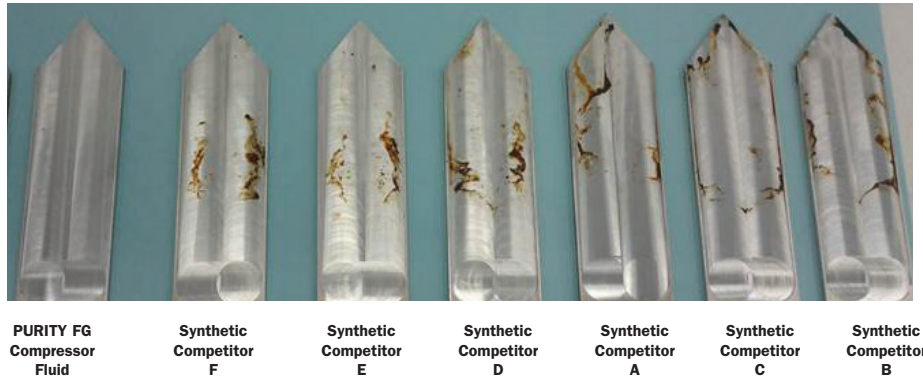
- Certified Kosher Pareve by Star K
- Certified Halal by IFANCA

Features and Benefits

- **Resists oxidative breakdown better than leading specialty food grade compressor fluids**
 - Better resistance to oxidative decomposition caused by exposure to air at high discharge temperatures.
 - Reduced oil thickening which can improve compressor efficiency
 - Up to 4,000 hours service life in rotary screw compressors (85°C/185°F)

- **Resists varnish formation**
 - Minimizes formation of harmful varnish and lacquer deposits on rotors and separators of rotary compressors, and carbon deposits on valve assemblies of reciprocating units.
 - Helps keep pneumatics free of sludge and varnish for smooth operation
- **Excellent separation from water contamination**
 - Improves efficiency of condensate recovery
- **Low foaming tendencies**
 - Keeps lubricant film intact for sealing and lubrication of bearings
- **Provides good anti-wear protection**
 - Improved bearing protection
- **Provides excellent rust and corrosion protection**
 - Helps to extend component life
 - Important when running intermittent service in high humidity conditions
- **Low odour**
 - Provides a safer work environment
- **Low volatility**
 - Minimizes top-up
 - Reduces oil carry-over
 - Improves efficiency in vacuum pump applications

Deposit Formation
Panel Coker Test, 260°C (500°F)



PURITY FG Compressor Fluid shows much better varnish control than that observed for the competitive synthetic products.

Applications

PURITY FG Compressor Fluids may be safely used to lubricate and cool rotary screw, rotary vane and reciprocating air compressors as well as vacuum pumps in food plant environments. Our recommendations for fluid change-out intervals in air compressors are:

| GRADE | COMPRESSOR | AIR DISCHARGE <85°C (185°F) | AIR DISCHARGE >85°C (185°F) |
|-------------------|-----------------------------|--------------------------------|--------------------------------|
| PURITY FG 32, 46 | Rotary Screws (Oil Flooded) | 4000 hours | 2000 hours ¹ |
| PURITY FG 100 | Rotary Vanes | Per OEM guidelines | |
| PURITY FG 68, 100 | Reciprocating | Per OEM guidelines | |

¹Up to a maximum of 100°C (212°F) air discharge temperature.

NOTE: These recommendations are based on no contamination in the initial fill and generally clean air supply. Tests should be conducted to determine fluid life in environments containing high levels of dirt and abrasive powders, corrosive atmospheres, chlorine, ammonia fumes and strong acids such as sulphuric acid, pickle acids, nitric acid, or hydrochloric acid.

NOTE: PURITY FG Compressor Fluids should not be used in breathing air apparatus or medical equipment.

Typical Performance Data

| PROPERTY | ASTM TEST METHOD | PURITY FG COMPRESSOR FLUIDS SynFX | | | |
|---|------------------|--|----------------------|----------------------|------------------------|
| | | 32 | 46 | 68 | 100 |
| Density, kg/L @ 15°C | D4052 | 0.865 | 0.869 | 0.872 | 0.874 |
| Viscosity, cSt @ 40°C (SUS @ 100°F) cSt @ 100°C (SUS @ 212°F) | D445 | 32 (165) 5.3 (44) | 44 (227) 6.6 (48) | 69 (357) 8.9 (56) | 105 (547) 11.9 (67) |
| Viscosity Index | D2270 | 101 | 99 | 103 | 101 |
| Flash Point, COC, °C (°F) | D92 | 224 (435) | 240 (464) | 254 (489) | 280 (536) |
| Pour Point, °C (°F) | D5950 | -42 (-44) | -45 (-49) | -36 (-33) | -33 (-27) |
| Colour | D1500 | <0.5 | <0.5 | <0.5 | <0.5 |
| Total Acid Number, (TAN) mg KOH / g | D664 | 0.1 | 0.2 | 0.1 | 0.1 |
| Rust A | D665A | Pass | Pass | Pass | Pass |
| Copper Corrosion, 3h, 100°C | D130 | 1B | 1B | 1B | 1B |
| Water Separability, 54°C (129°F), mL (min.) 82°C (180°F), mL (min.) | D1401 | 40-39-1 (10) - | 40-39-1 (10) - | 40-39-1 (10) - | - 41-39-0 (10) |
| Foaming Resistance, Sequence 1 | D892 | 5/0 | 0/0 | 5/0 | 0/0 |
| Carbon Formation, Ramsbottom Carbon, % mass | D524 | 0.07 | 0.06 | 0.08 | 0.09 |
| Oxidation Stability, RPVOT Time to oxidation, min | D2272 | 1815 | 2061 | 2349 | 2894 |
| Four ball wear scar diameter, (1200 rpm, 75°C, 1hr, 40 kg), mm | D4172 | 0.46 | 0.47 | 0.47 | 0.43 |

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

Shelf Life: Product shelf life is 3 years from the date of manufacture when stored in sealed containers under protected storage conditions*.

* Protected storage conditions includes indoor or covered storage, protected from contamination including exposure to rain and snow, exposure to direct sunlight, exposure to extreme temperatures and high / low temperatures cycles.

To order product or to learn more about how Petro-Canada Lubricants can help your business visit: **lubricants.petro-canada.com** or contact us at: **lubecsr@petrocanadalsp.com**



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