Petro-Canada

TechData

PURITY™ FG COMPRESSOR FLUIDS

Introduction

For the past 20 years, every product in our Purity FG line of food grade lubricants has been formulated to excel under harsh plant conditions, while meeting the highest safety standards.

Petro-Canada's new and improved Purity FG Compressor Fluids are advanced food grade lubricants formulated to deliver superior performance and long service life in today's tough food plant environments.

As conditions in food plants become tougher, so must the equipment that runs your operation. Wet/humid processing environments, high air throughput, hot discharge temperatures and start/stop operation modes are just some of the challenging service conditions compressor oils must endure. As the plant environment and operation conditions change, so should your oil.

New and improved PURITY FG compressor fluid performance is the result of breakthrough technology that builds upon the already excellent properties of the original, to provide significantly stronger performance and durability. New and Improved Purity FG compressor fluids can now be used in more severe applications and under hotter operational conditions. With significant improvements in oxidation resistance over our already highly oxidatively stable product, expect better performance over the long term.

The high performance of the Purity FG line of products can be attributed to accumulated formulating experience using base oils made by the hydrotreating HT purity process to remove impurities that could hinder performance.

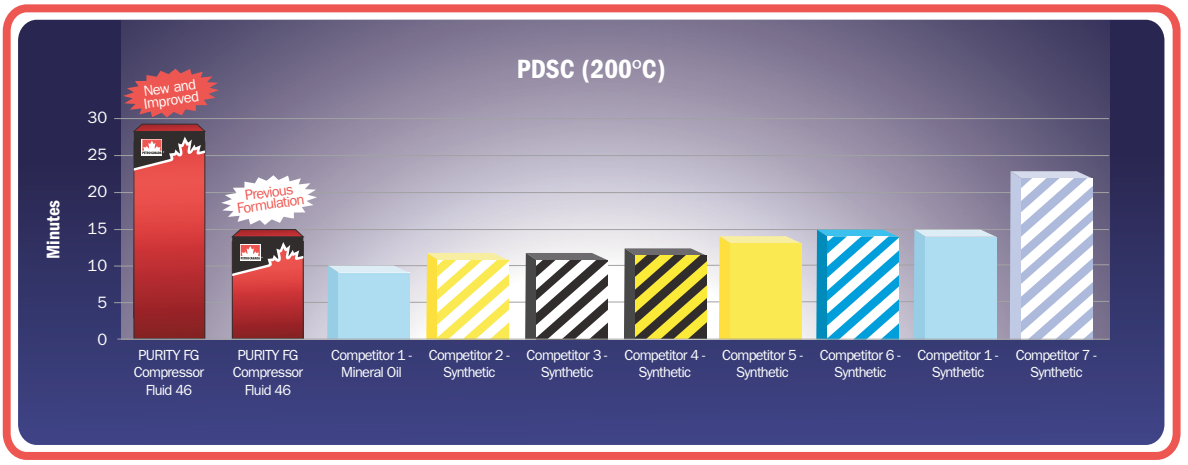
Fortified with specially selected performance additives, New and Improved Purity FG Compressor fluids have even better resistance to oxidative breakdown than ever before.

Purity FG Compressor Fluids also meet the highest food industry purity standards and fit perfectly in HACCP (Hazard Analysis and Critical Control Point) and GMP (Good Manufacturing Practice) plants. All fluid components comply with FDA regulation 21CFR178.3570 "Lubricants with incidental food contact". All fluids are H1 registered by NSF. They are certified Kosher and Halal.

What is the HT difference?

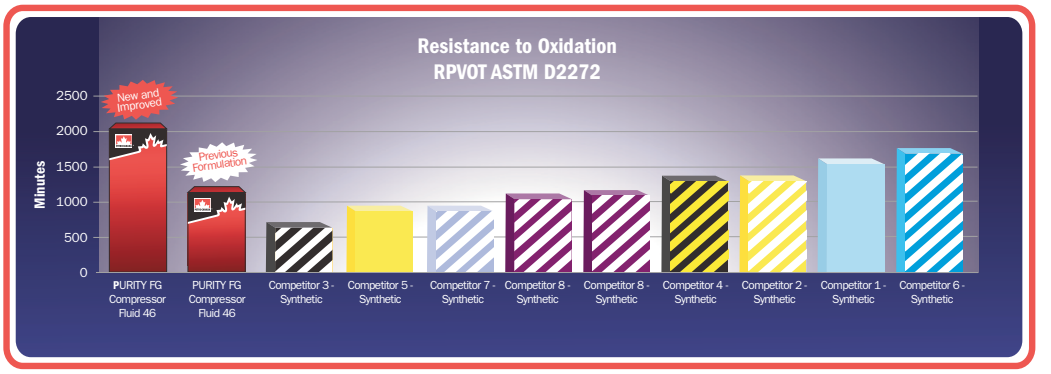
Petro-Canada starts with the HT purity process to produce water-white, 99.9% pure base oils. The result is a range of lubricants, specialty fluids and greases that deliver maximum performance for our customers.

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



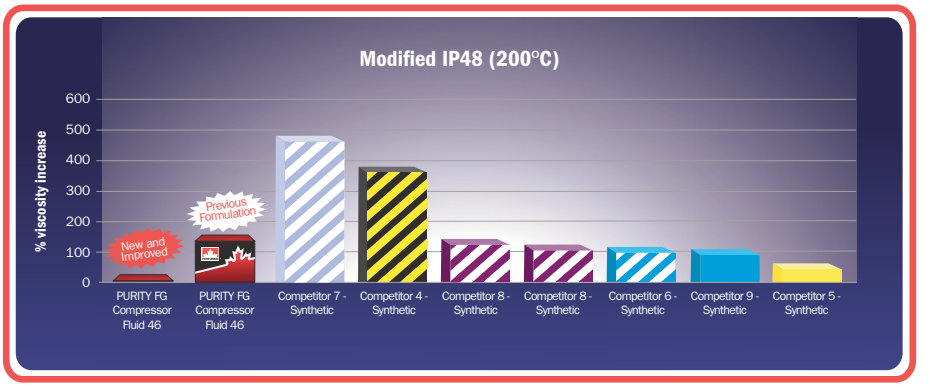
New and Improved PURITY FG Compressor Fluids provide outstanding resistance to oxidative breakdown, caused by exposure to air at high discharge temperatures

Resistance to Oxidation
Rotating Pressure Vessel Oxidation Test, ASTM D2272



New and Improved 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)



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

Food Grade Approved

- **Fully approved for use in and around food processing areas**
  - H1 registered by NSF
  - All fluids components comply with FDA 21 CFR 178.3570 “Lubricants with incidental food contact”.

NSF
Nonfood Compounds
Program Listed H1

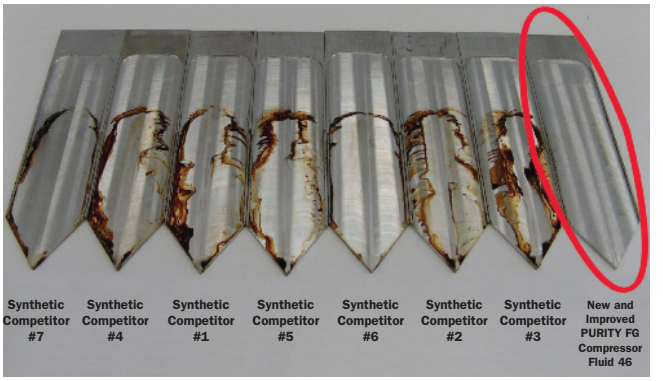
  - Certified by Star K for use in the preparation of kosher food
  - Certified Halal by IFANCA
- **Maintains food allergy safety**
  - Free of gluten
  - Contains no peanuts, tree nuts or their derivatives
  - Manufactured in a facility that does not manufacture, store, or otherwise handle any peanut or tree nut products.

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)
  - Significant improvement in oxidation stability over current formulation
- **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 thin film lubrication 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 and ashless**
  - Provides a more pleasant work environment
- **Low volatility**
  - Minimizes top-up
  - Reduces oil carry-over
  - Improves efficiency in vacuum pump applications

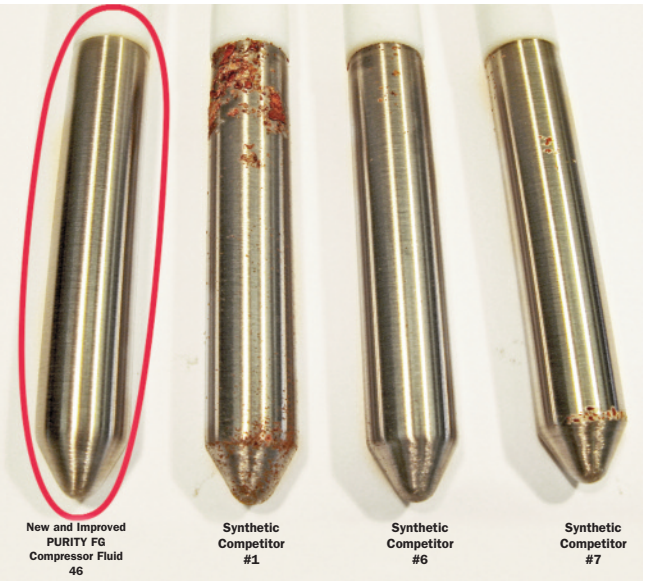
Note: The number of competitive products is different for some of the tests. Not all tests were completed for every product, however, all results for all tests completed are published here.

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



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

Corrosion control
Rust B, ASTM D665B



New and Improved PURITY FG Compressor Fluid shows much better corrosion 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 and vacuum pumps in food plant environments.
Our recommendations for fluid change-out intervals are:

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

[1]Up 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 with 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 METHOD	PURITY™ FG COMPRESSOR FLUIDS			
		32	46	68	100
Density, kg/L @ 15°C	D4052	0.867	0.869	0.871	0.872
Viscosity, cSt @ 40°C (SUS @ 100°F) cSt @ 100°C (SUS @ 212°F)	D445	31 (160) 5.2 (43)	44 (227) 6.6 (48)	67 (347) 8.6 (55)	101 (527) 11.4 (65)
Viscosity Index	D2270	100	98	100	98
Flash Point, °C (°F)	D92	219 (426)	249 (480)	257 (495)	285 (545)
Pour Point, °C (°F)	D5950	-18 (-0.4)	-18 (-0.4)	-15 (5)	-15 (5)
Colour	D1500	<0.5	<0.5	<0.5	<0.5
Total Acid Number, (TAN) mg KOH / g	D664	0.5	0.4	0.4	0.4
Rust A	D665A	Pass	Pass	Pass	Pass
Rust B	D665B	Pass	Pass	Pass	Pass
Cu corrosion, 3h, 100°C	D130	1A	1A	1B	1B
Water Separability, 54°C (129°F), mL (min.) 82°C (180°F), mL (min.)	D1401	41-39-0 (5) -	41-39-0 (5) -	42-38-0 (15) -	- 42-38-0 (5)
Foaming Resistance, Sequence 1	D892	10/0	10/0	5/0	0/0
Carbon Formation, Ramsbottom Carbon, % mass	D524	0.06	0.09	0.09	0.09
Oxidation Stability, Time to oxidation, min	D2272	1883	2113	2063	1622
Four ball wear scar diameter, (1200 rpm, 75°C, 1hr, 40 kg), mm	D4172	0.50	0.43	0.45	0.44

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

Health and Safety

Petro-Canada PURITY™ FG compressor lubricants have no adverse effects on health, provided they are used as directed. To obtain Material Safety Data Sheets (MSDS), contact one of our Techdata Info Lines.

CERTIFIED
ISO 9001
ISO 14001
ISO/TS 16949

TechData Info Lines

To place an order, please call a Customer Order Management Representative at :

Canada (English) . . . . . Phone 1-800-268-5850
(French) . . . . . Phone 1-800-576-1686
United States . . . . . Phone 1-877-730-2369
Latin America . . . . . Phone +1-416-730-2369
Europe . . . . . Phone +1-416-730-2389
Asia . . . . . Phone +1-416-730-2372
China . . . . . Phone +86 (21) 6362-0066

You can also e-mail us at lubecsr@suncor.com

To learn more about how Petro-Canada lubricants, specialty fluids, oils and greases can help maximize your equipment performance, savings and productivity, please contact us at :

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