



AN HF SINCLAIR BRAND

GAS PLANT AND PIPELINE LUBRICANTS

SOLUTIONS FOR TODAY'S
NATURAL GAS OPERATIONS

TABLE OF CONTENTS

IMPROVE EQUIPMENT PERFORMANCE, EXTEND
ENGINE LIFE, REDUCE DOWNTIME AND BOOST YOUR
BOTTOM LINE WITH A WIDE VARIETY OF PREMIUM
PETRO-CANADA LUBRICANTS PRODUCTS.

Our Winning Combination	3
Stationary Gas Engine Oils	4–8
Natural Gas Compressor Fluids	9
Turbine Fluids	10–11
Gas Plant & Pipeline Lubricants	12–13
Meet Our Technical Experts	14
Customer Success Stories	15



OUR WINNING COMBINATION

DELIVERING PROVEN PERFORMANCE AND UNMATCHED SERVICE

Processing and transporting natural gas requires reliable equipment. The lubricants you use play a crucial role in keeping your engines, compressors and turbines running smoothly.

We understand that unexpected downtime is unacceptable. That's why Petro-Canada Lubricants products deliver the winning combination of protection, performance and extended drain intervals. And it's all backed by unmatched service from technical experts who are invested in your success.

It starts with performance that exceeds today's standards and your expectations.

Right now, our products are exceeding expectations for many of the world's leading companies.

By exceeding specifications in ways that matter, our premium lubricants can help your business improve equipment performance, optimize operations and boost your bottom line.

It continues with our knowledgeable people.

Our Technical Services team provides timely, on-site solutions that can extend equipment uptime, reduce maintenance costs and give you the best return on your investment. Our leading Research & Development team will collaborate with you to develop solutions that help your stationary gas engines, compressors and turbines consistently perform at their best.

YOUR NEW FRONTIER OF PERFORMANCE

At Petro-Canada Lubricants we combine our premium products with superior service, unprecedented access to resources, and a global supply chain to help you reach a new frontier.

STATIONARY GAS ENGINE OILS

SETRON™ stationary gas engine oils deliver unparalleled performance through a longer-lasting oil.

SETRON LD 8000, our premium, low-ash SAE 40 oil, uses breakthrough technology to extend drain intervals by up to 300% versus the leading global conventional competitor.* This can mean lower maintenance costs and a more efficient operation. Meeting and exceeding the standards of many OEMs, SETRON LD 8000 has set a new industry standard.

NATURAL GAS COMPRESSOR FLUIDS

Our natural gas compressor fluid product slate covers a range of product chemistries and viscosity grades to suit your application needs for both rotary screw and reciprocating compressor systems in hydrocarbon gas production and service.

Petro-Canada Lubricants natural gas compressor fluids provide the lubrication performance necessary to keep your equipment working effectively. This includes our cost-effective, mineral oil-based PC GasComp™ HT, our workhorse Compressor Oil RP™, and our premium PC GasComp SP and PC GasComp IP fluids.

TURBINE FLUIDS

TURBOFLO™ turbine fluids allow steam, hydraulic and gas turbines to perform at their best despite harsh operating environments. Our TURBOFLO HTS, TURBOFLO XL, TURBOFLO EP, TURBOFLO R&O and TURBOFLO LV premium turbine fluids exceed the demands of the world's leading turbine OEMs.

*In Caterpillar G3500 TALE engines running in gas compression, with >90% loads and pipeline quality fuel.

STATIONARY GAS ENGINE OILS

FIELD TESTED. FIELD PROVEN.

Petro-Canada Lubricants stationary gas engine oils (SGEOs) deliver unparalleled performance in the severe operating conditions common to gas plants.

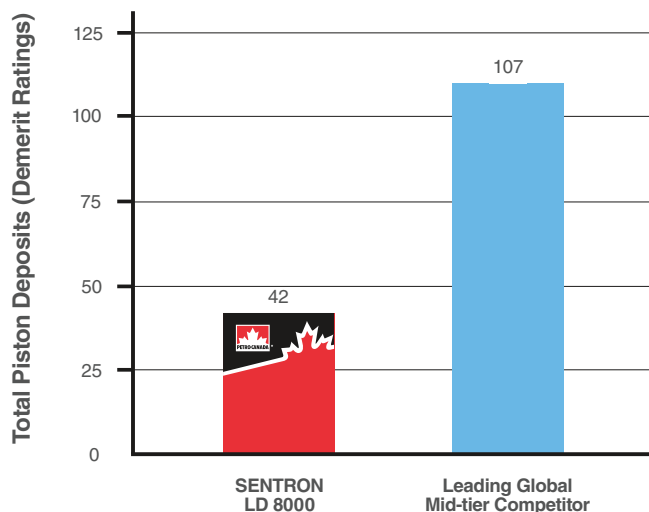
The SENTRON™ family of products are uniquely formulated to increase reliability and reduce service downtime. SENTRON delivers:

- Superior anti-wear protection and deposit control to extend equipment life
- Unparalleled engine performance through a longer-lasting oil
- Extended drain intervals through exceptional oxidation/nitration resistance and acid neutralization capabilities
- Expert recommendations from our Technical Services and Research & Development teams to ensure you get the best-performing oils

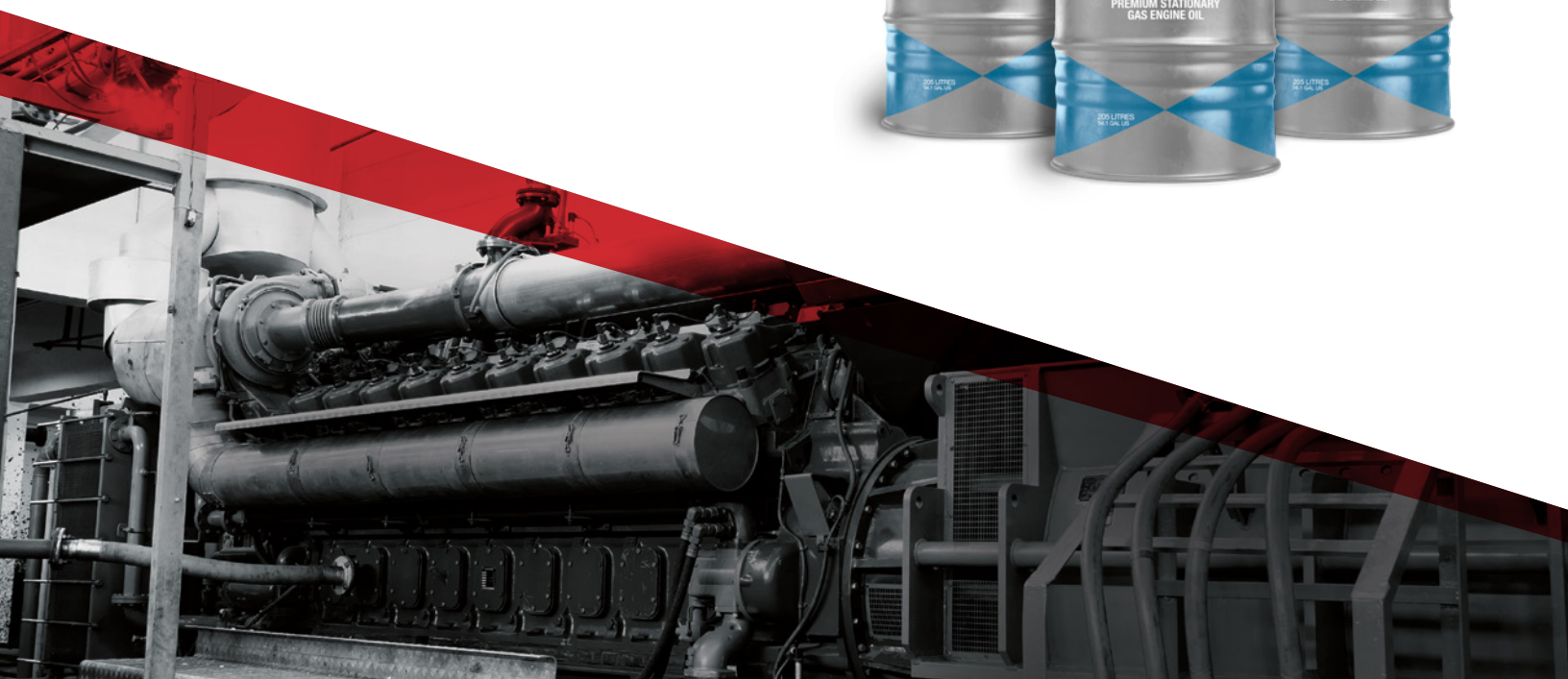
PROVE IT IN YOUR OWN PLANT

SENTRON products have a proven track record under a wide range of operating conditions. Still, switching SGEO products is a big decision. Our knowledgeable experts can provide recommendations and help you conduct your own field tests. We're confident you'll see how SENTRON optimizes your engine productivity.

Caterpillar G3500 TALE Engine Piston Deposit Comparison



In a trial on a Caterpillar G3500 TALE stationary gas engine, SENTRON LD 8000 reached up to 8,000 hours in a natural gas compression application with pipeline gas quality, under high load (>90%) conditions.



SENTRON™ LD 8000

EXTENDED DRAIN INTERVALS, IMPROVED PERFORMANCE

SENTRON LD 8000 is a premium low-ash formulation that combines a high degree of oxidative stability with nitration resistance. This allows you to extend drain intervals by up to 300%.*

In independent testing, it demonstrated high resistance to oxidation and nitration—leading to exceptional oil life. That means lower operating costs and optimal performance for both older engine types and new lean burning engines running on natural gas, pre-treated sewage / biogas and selective pre-treated process gases.

A low-ash SGEO, SENTRON LD 8000 contains a specialized additive mix that provides greater base number (BN) retention to help neutralize acids that can attack liner surfaces. In OEM testing, it showed outstanding deposit control, with anti-wear protection that enhances reliability and minimizes service downtime.

**LEARN MORE
ABOUT SENTRON
VERIFICATIONS AND
APPROVALS HERE:**



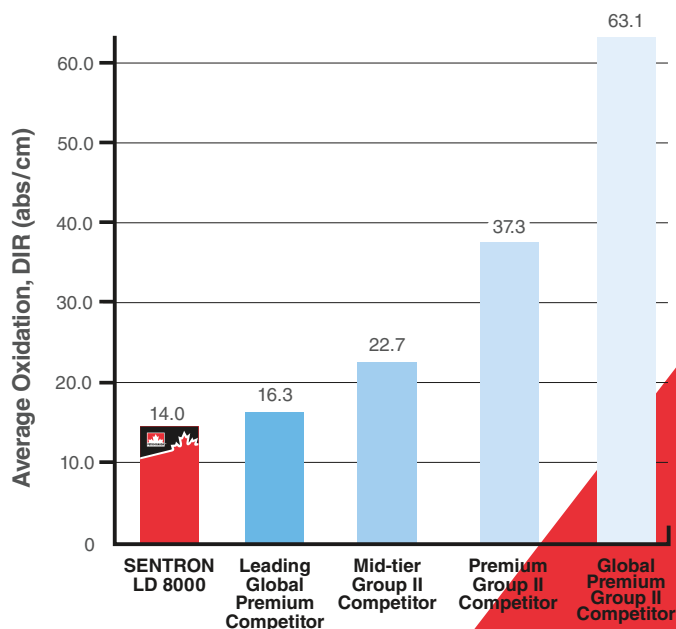
DRAIN CAPABILITY (HOURS)

PARAMETER AVERAGES	SENTRON LD 8000	LEADING GLOBAL MID-TIER COMPETITOR
% viscosity increase, base number (BN) remaining, acid number (AN) increase percent, metals (Fe, Pb, Cu)	7,000–8,000	1,900
Oxidation, IR (abs/cm)	7,000–8,000	900
Nitration, IR (abs/cm)	>8,600	4,200

**In a trial on a Caterpillar G3500 TALE stationary gas engine, SENTRON LD 8000 reached up to 8,000 hours in a natural gas compression application with pipeline gas quality, under high load (>90%) conditions.*



Oxidation: Oil Aging Test



8,000 HOURS
USED TO BE
UNTHINKABLE.
**WE'VE MADE IT
THE STANDARD.**

A FULL SUITE OF HIGH-PERFORMING STATIONARY GAS ENGINE OILS*

ASHLESS PRODUCTS

SENTRON™ ASHLESS 40

Recommended for high performance in 2-stroke and certain lightly loaded 4-stroke cycle engines. Helps minimize combustion chamber and spark plug deposits and minimizes port plugging.

LOW-ASH PRODUCTS

SENTRON LD 8000

A premium low-ash formulation that offers high resistance to oxidation and nitration, outstanding deposit control and anti-wear protection, and greater alkaline retention to neutralize acids — all while extending drains beyond today's standards.

SENTRON LD 5000

Extends drain intervals by up to 200%*** and delivers exceptional overall engine protection for greater reliability and savings. Helps minimize piston, ring zone, valve stem and combustion chamber deposits. Recommended for use in INNIO Waukesha and many other turbocharged or naturally aspirated, stoichiometric or lean burn engines under high operating temperatures.

SENTRON LD 3000

Provides excellent protection and performance in regular operating conditions as well as severe conditions. Provides excellent control of engine deposits in high operating temperatures. Recommended for use in most 4-stroke cycle and some 2-stroke cycle gas engines, including Caterpillar and Waukesha in gas compression applications.

SENTRON LD SYNTHETIC BLEND

An SAE 15W-40 formulation with excellent low-temperature performance with capabilities down to -20°C (-4°F). SENTRON LD Synthetic Blend is recommended for use in large bore gas engines prone to excessive combustion chamber deposits, including Caterpillar and Waukesha engines.

SENTRON VTP 10W-40

A low ash formulation specially designed to meet the demands of formerly diesel- and gasoline-fueled automotive and light truck engines converted to natural gas for exceptional component cleanliness through all seasons. Suitable for use in applications where Cummins CES 20074 is specified.

SENTRON VTP 0W-30

A low ash formulation specially designed as an all-season solution for small to mid-sized converted automotive engines that are difficult to start in severe winter conditions. Delivers exceptional component cleanliness.

SENTRON™ VTP 10W-40 PLUS

A mid ash formulation specially designed to aid gasoline converted engines to stationary gas engines that need additional anti-wear characteristics due to the valve train, and/or for engines where improved low temperature performance benefits are desired due to cyclic engine on-off cycles.

SENTRON VLA 40

"Very" low-ash stationary gas engine oil specifically designed for engines running at low loads (<60% MCR). Reduces ring sticking or breaking and valve burning, prevents detonation and pre-ignition, and reduces spark plug fouling in low-loaded engines.

SENTRON CG 40 PLUS

A uniquely designed low-ash formula that provides excellent deposit control and corrosion protection in 4-stroke gas engines running in biogas, sewage gas and landfill gas operations. Specifically designed to address current and future engines running in severely contaminated gas applications where higher-BMEP engines are used.

*All SENTRON stationary gas engine oils are suitable for engines equipped with catalytic converters.

**In Caterpillar G3500 TALE engines running in gas compression, with >90% loads and pipeline quality fuel.

***All data generated were on engines in gas compression service under >90% load using pipeline quality fuel and typical field conditions.

MEDIUM-ASH PRODUCT

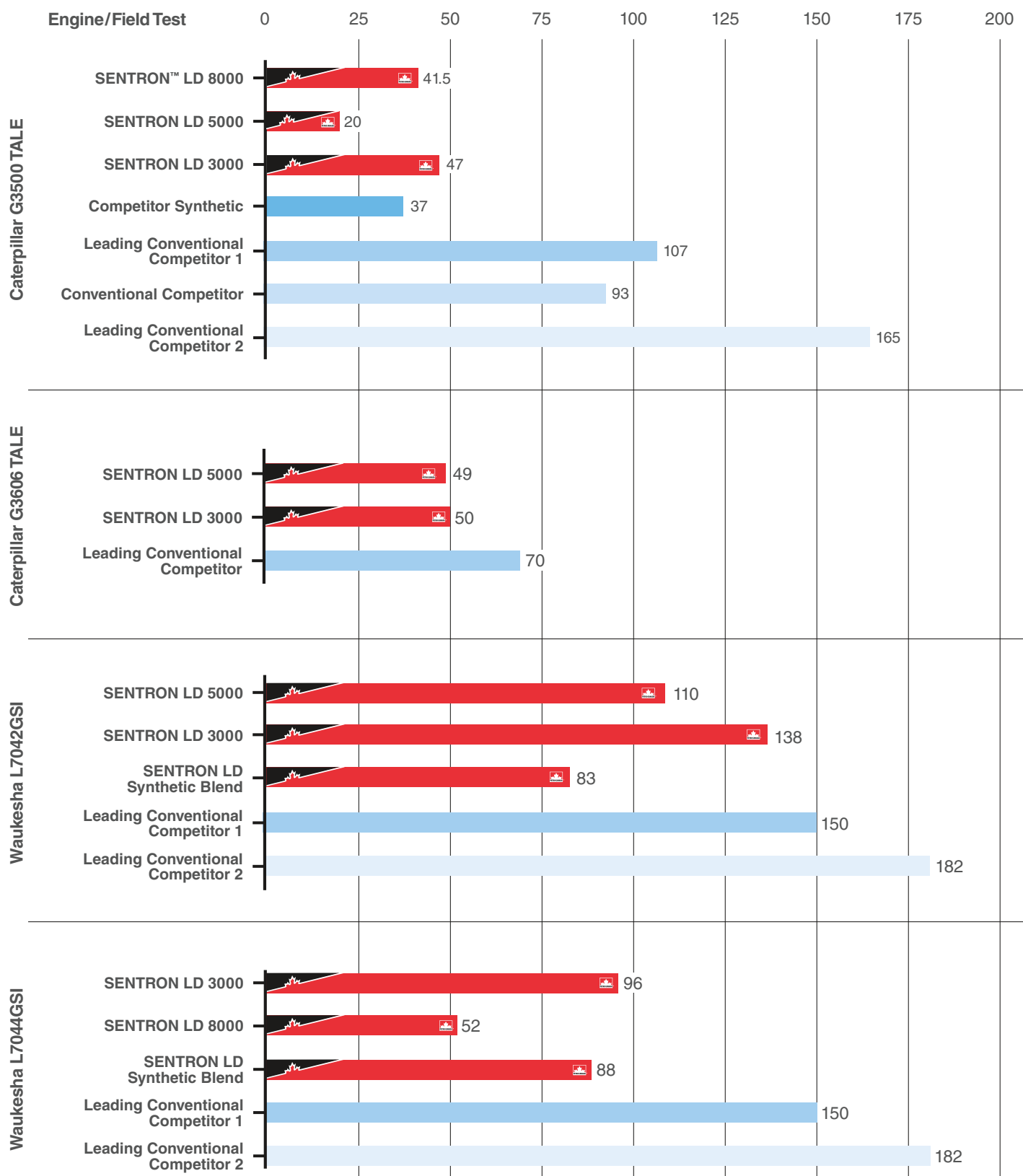
SENTRON™ CG 40

Contaminated fuels can contain sulphur, chlorine and fluorine and produce strong acids when combusted. In these conditions, SENTRON CG 40 demonstrates better acid neutralization compared to low ash oils — preventing corrosion and providing longer oil life. SENTRON CG 40 is the first medium-ash oil approved for use in Jenbacher Type 4B and 4C engines running on several classes of biogas.



PISTON DEPOSIT DEMERIT POINTS*

(THE LOWER THE NUMBER, THE CLEANER THE PISTON)



*All SENTRON stationary gas engine oils are suitable for engines equipped with catalytic converters.

HYDROCARBON GAS COMPRESSOR FLUIDS

PERFORMANCE THAT EXCEEDS EXPECTATIONS

The extensive Petro-Canada Lubricants line of natural gas compressor fluids is formulated to deliver excellent performance and superior protections while addressing your unique needs.

PC GasComp™ SP and IP

Polyalkylene glycol (PAG) fluids with a premium and modern additive package that provides excellent performance and operational efficiencies.

PC GasComp IP series is available in ISO 150 and is recommended for:

- Compression of propane in refrigeration systems

PC GasComp SP series is available in ISO 100, 150 and 220 and is recommended for:

- Compression of heavy hydrocarbon and water contaminated gas streams
- High pressure reciprocating gas compression
- Compression of gas with CO₂
- Compression of gas with H₂S
- Compression of acid gas

PC GasComp HT 100 and 150

These hydrotreated (HT) mineral oil based fluids are specifically formulated with advanced anti-corrosion chemistry for extended corrosion protection in acidic environments of natural gas and sour gas compression in rotary screw and reciprocating compressors at moderate to high temperatures.

Compressor Oil RP™ 268 and 460

These compressor oils help provide strong lubricity and wear protection in reciprocating compressors handling sour, wet or contaminated natural gas. RP 268 and RP 460 are designed to compensate for gas dilution and wash-off.



TURBINE FLUIDS

UNPARALLELED PERFORMANCE FROM START TO FINISH

The premium line of Petro-Canada Lubricants turbine fluids delivers excellent lubrication and cooling to steam, hydraulic and gas turbines. These fluids perform well as general-purpose circulating oils in various industrial applications. Every product in the TURBOFLO™ product family exhibits exceptional oxidation resistance and thermal stability, providing protection and reliability.

TURBOFLO HTS

TURBOFLO HTS is a premium turbine fluid formulated with severely hydrotreated base oils and highly advanced additive chemistry. The carefully selected components with specific chemical structures and properties provide a synergy between the additives and the base oils that leads to exceptional thermal stability and enhanced oxidative resistance. TURBOFLO HTS delivers the rare combination of strong deposit control with EP characteristics. It is an ashless product and free of metals or organometallic compounds.

TURBOFLO HTS, available in ISO 46 grade, is recommended for:

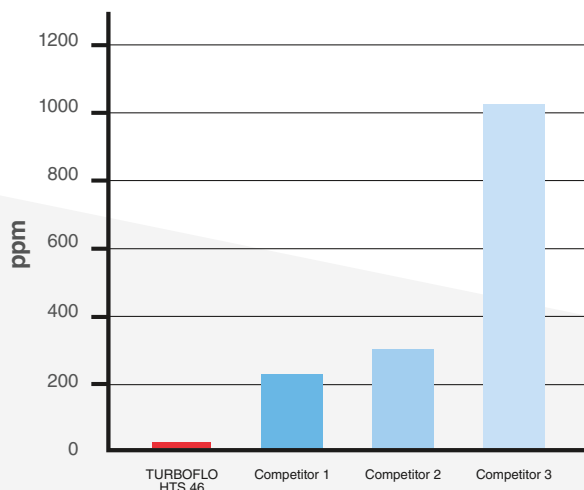
- Geared turbines that require a turbine fluid with wear and scuffing protection
- Non-geared steam and gas turbine systems that do not require an EP fluid
- Gas turbine and compressor units, steam turbines, turbocompressors and screw compressor plant units exposed to process gas that require a suitable control and governor fluid



FORGET VARNISH
REMOVAL.

**WE DELIVER
VARNISH
PREVENTION.**

**Deposits generated in MAN
thermal stability test at 180°C**



TURBOFLO HTS 46 demonstrates outstanding thermal stability as compared to competitor products.

MEET THE TURBOFLO™ FAMILY



TURBOFLO XL

TURBOFLO XL is designed to lubricate and cool steam and gas engines while delivering excellent lubrication to bearings operating in severe conditions. It also demonstrates outstanding oxidation resistance and strong thermal stability.

TURBOFLO XL, available in ISO 32, 46 and 68 grades, is recommended for:

- High-speed bearings in gas turbines
- Steam turbines used for electric power generation and other industrial applications

TURBOFLO EP

TURBOFLO EP demonstrates outstanding oxidation resistance and strong thermal stability, especially in severe-service gas and steam turbine applications. It also provides exceptional resistance to fluid breakdown caused by exposure to air and high temperatures.

TURBOFLO EP, available in ISO 32 and 46 grades, is recommended for:

- Gas and steam turbines in power generation, prime mover and other industrial applications
- Geared heavy-duty gas turbines that require wear and scuffing protection

TURBOFLO R&O

TURBOFLO R&O oils, available in multiple viscosity grades, are high-quality lubricants designed to provide rust and oxidation resistance, reliable performance and extended service life.

TURBOFLO R&O is recommended for:

- Steam and gas turbines
- Circulating oil systems for various industrial machinery

TURBOFLO LV

TURBOFLO LV is a premium, low-varnish turbine fluid designed to cool steam, gas and combined cycle turbines operating in severe conditions. TURBOFLO LV is formulated to maintain performance in high-temperature, high-pressure environments. It's specifically designed to prevent varnish and sludge deposits on critical surfaces in turbine systems.

TURBOFLO LV, available in ISO 32 and 46 grades, is recommended for:

- High-speed bearings in gas turbines
- Steam turbines used for electric power generation and other industrial applications
- Extended, corrosion-free lubrication of bearings operating in ambient temperatures up to 260°C (500°F)

A COMPLETE LINE OF LUBRICANTS

FOR GAS PLANTS AND PIPELINES

DURON™ UHP

Available in SAE 10W-40, 5W-40, 0W-30 and 0W-40 grades, these oils are ultra-high-performance, full synthetic, all-weather heavy-duty diesel engine oils. They are designed to provide exceptional protection against engine wear and extended drain performance (exceeding OEM standard intervals)* even in the harshest operating conditions and maximum allowable load conditions. They combine superior pumpability and robust shear stability with excellent engine wear control and oil top-up performance through ease of startups and lower viscous drag.

Formulated to perform in the harshest cold temperatures, DURON UHP 0W-40 provides excellent engine protection and advanced soot control that minimizes viscosity thickening and aids in delivering faster cold startups and exceptional cold pumping abilities—minimizing engine stress and wear. It will provide protection in conditions as cold as -40°C (-40°F).

DURON SHP

DURON SHP is one of the most durable super-high-performance, heavy-duty diesel engine oils we have ever made in order to meet the demands of the new API CK-4 service category. DURON SHP blends our uniquely pure base oils with advanced synthetic blend base oil technology to help you reduce costs, improve reliability and protect your on- and off-road engines, no matter how tough it gets. Available in SAE 15W-40 and 10W-30 grades.

DURON HP

DURON HP heavy-duty diesel engine oil meets and exceeds API CK-4/SN, is low in sulfated ash and is blended with the purest base oils. It helps provide excellent oxidative stability and durability. API CK-4 oils are required for low-emission engine technology. Available in SAE 15W-40.

DURON MONOGRADE

DURON Monogrades are designed to lubricate engines in heavy-duty service. They are suitable for engines fueled by diesel, gasoline, propane or compressed natural gas (CNG) where single-grade API CF or CF-2 quality engine oil is recommended. Available in SAE 10W, 30, 40 and 50 grades.



HYDREX™ HYDRAULIC FLUIDS

Longer-lasting fluids with up to 2x better wear protection than the leading global hydraulic oil brands.** They resist degradation, minimize sludge and varnish for less maintenance, and reduce fuel consumption by up to 5%***



ENDURATEX™ EP INDUSTRIAL GEAR OILS

High-quality, extreme-pressure lubricants designed for enclosed industrial gear drives operating under severe load conditions or in wide temperature extremes. ENDURATEX EP is available in conventional and synthetic grades.

PRECISION™ GREASES

A premium line of multi-application greases specially formulated to provide: 1) better long-life protection, 2) better water washout protection, and 3) better extreme-pressure protection.

Available in various product tiers and NLGI grades. PRECISION Synthetic, Synthetic 220, XL EP1 and XL EP2 all meet NLGI's GC-LB Automotive Service Classification.

PETRO-THERM™ AND CALFLO™ HEAT TRANSFER FLUIDS

Developed for use in non-pressurized, liquid phase, closed heat transfer systems. See product technical data for operating temperature capabilities.

ARDEE™ OIL

Lubricates and cools the mechanisms for water injection and hydrocarbon reciprocating plunger pumps. Works well due to excellent tackifiers.

COMPRO™ COMPRESSOR FLUIDS

Extensive line of fluids for air compressors provides strong resistance to oxidative breakdown to reduce varnish and sludge formation, minimize premature shutdowns and provide long and reliable service life.

SYNDURO™ SHB FLUIDS

A family of synthetic multi-functional lubricants designed to deliver excellent component protection for equipment operating at high speed or mild EP loads over a wide temperature range during extended service intervals. They are especially suitable for a wide range of gear, bearing and compressor applications in the forestry, mining, marine and heavy-duty industries where low seasonal startup temperatures and/or high operating temperatures prevail.



* Extending drain intervals should always be undertaken in conjunction with a regular oil analysis program.

** Measured against leading North American hydraulic oil brands.

*** HYDREX XV compared against leading global multigrade hydraulic fluids.

Petro-Canada Lubricants products are designed for a wide range of industrial lubrication needs for plants and pipelines to help you operate under heavier loads and run at higher speeds with longer lubricating intervals.

WE'RE THERE FOR YOU WHEN YOU NEED US

Our Technical Services and Research & Development teams are available to deliver unmatched service. We'll collaborate with you to develop solutions that address your needs, increase productivity and cut operating costs. Face to face or over the phone, our support team is ready with cost-savings models, lube surveys and unbiased used oil analysis.

We've got the tools to help you consolidate your lubrication product inventories, too. And with our world-class distribution network, you can always count on having the lubricants you need, when you need them. Choose us and get gas plant and pipeline solutions that go beyond today's standards.

ANSWERING TOMORROW'S NEEDS TODAY

Our lubricants meet or exceed equipment manufacturers' specifications and the high quality standards of the industry. We're the first lubricants company in the world to achieve ISO/TS 16949, which replaced QS9000. We're also ISO 9001 registered. And with our ISO 14001 registration, we share the same growing commitment to the environment as you do.

OUR COMMITMENT TO QUALITY AND THE ENVIRONMENT

Now more than ever, integrity is the foundation on which trust and success are built. For over 20 years, we've abided by a strict code of conduct and built a reputation as a responsible and ethical corporate citizen. We understand that operating a business means doing more than simply meeting legal and regulatory requirements. We must balance economic growth with environmental stewardship and local community support.



AN HF SINCLAIR BRAND





"We have been working with Petro-Canada Lubricants to improve the efficiencies of our operation. One particular initiative we have been really impressed with is the extension of our drain intervals in J320 Jenbacher stationary gas engines from 800 hours to over 1,600 hours. Doubling our drain intervals brings both financial and environmental benefits to our operation."

LORNE PAWLUK

MECHANICAL MAINTENANCE SUPERVISOR
GVRD ANNACIS ISLAND WWTP

"With SENTRON™, we were able to extend drain intervals by over 100%, creating cost savings because of reduced oil consumption, the cost of spare parts, and less downtime for maintenance."

R. IL'YASOV

CHIEF ENGINEER
PECHORANEFT

"These are demanding conditions. Terra Nova has to maintain production in the heavy Atlantic seas, with a lot of wave action. TURBOFLO™ EP has provided 15 years of service, no hiccups. Terra Nova's turbines have been running for approximately 97,000 hours and counting. TURBOFLO EP has given Terra Nova multiple years of stable and reliable operation in a harsh marine environment under all operating conditions."

COLIN HALEY

P. ENG. MECHANICAL ENGINEER
TERRA NOVA FPSO

OUR NO-NONSENSE LUBRICANTS **WARRANTY**

We will repair equipment or replace equipment parts that are damaged due to defects of a Petro-Canada Lubricants product, as long as the lubricant is used in accordance with your equipment manufacturer's and our recommendations.

IT'S MORE THAN JUST A WARRANTY. IT'S A COMMITMENT.

To learn more about how Petro-Canada Lubricants products can help your business, visit **petrocanadalubricants.com** or contact us at **lubecsr@hfsinclair.com**



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