

White Mineral & Specialty Base Oils

Start Pure. Finish Strong.



SPECIALTY PRODUCTS

A HOLLYFRONTIER BUSINESS



Not all
base oils
are created
equal

—250

—200

—150

—100

Superior performance starts with purity

Petro-Canada Specialty Products produces specialty base oils, process oils, white oils and drilling mud base fluids that are among the purest in the world. For every application, in every type of equipment and in a wide variety of industries, products made from our specialty fluids make a measurable difference in the end, because they're pure from the start.

A better base for your business to build on

Not all base oils and fluids are created equal. As a pioneer in the manufacturing of Group II and Group III base oils, we apply more than 40 years of experience in choosing the right catalyst and selecting high-quality feedstock. Operating at a high degree of severity, we use the **HT Purity Process** to remove impurities that can hinder performance, to provide you with superior base oils and specialty fluids:

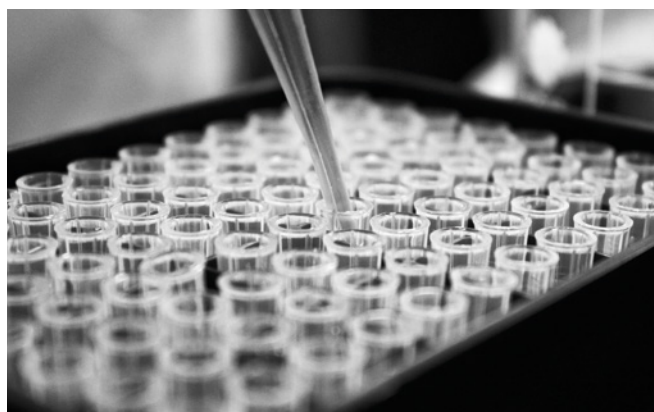
- Clear, colourless, odourless
- Virtually nontoxic
- Highly saturated isoparaffin content
- High viscosity index
- Excellent low-temperature properties
- Good oxidative resistance and thermal stability
- Good demulsibility
- Good biodegradability characteristics

We invite you to put our purity to the test. Contact Petro-Canada Specialty Products to request a free sample:

lubricants.petro-canada.com
lubecsr@petrocanadalsp.com



“As a pioneer in the manufacturing of Group II and Group III base oils, we apply more than 40 years of experience in choosing the right catalyst and selecting high-quality feedstock.”



A more refined approach

HT Severe Hydrocracking process (Group II)

In the HT Severe Hydrocracking process, Petro-Canada Specialty Products eliminates aromatics and polar compounds by reacting the feedstock with hydrogen, in the presence of a catalyst, at high temperatures and pressures. The hydrocarbon molecules that are formed are very stable, which makes them ideal for use as lubricant base oils.



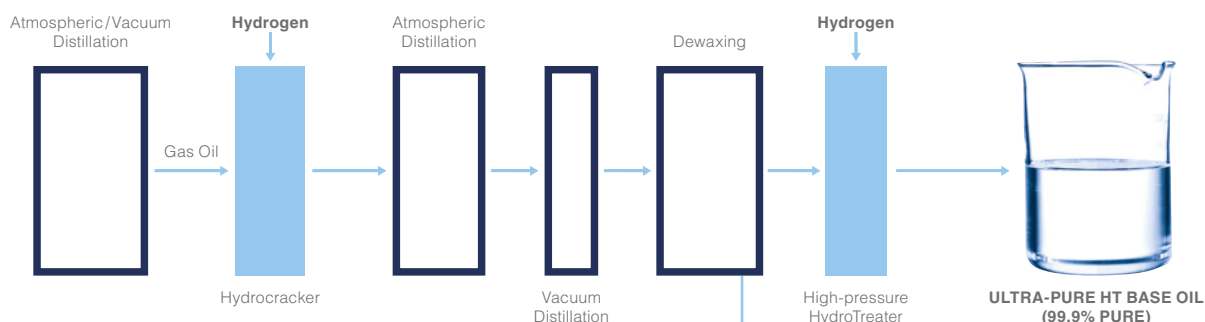
HT Severe Hydrocracking/ Hydroisomerization (Groups II, II+ and III)

Our second production unit uses the HT Severe Hydrocracking process, but replaces conventional dewaxing with Hydroisomerization. Using a sophisticated catalyst, we selectively isomerize the wax to a high-VI, low-pour, isoparaaffinic fluid that provides end performance characteristics very similar to lubricants based on polyalphaolefins (PAOs).

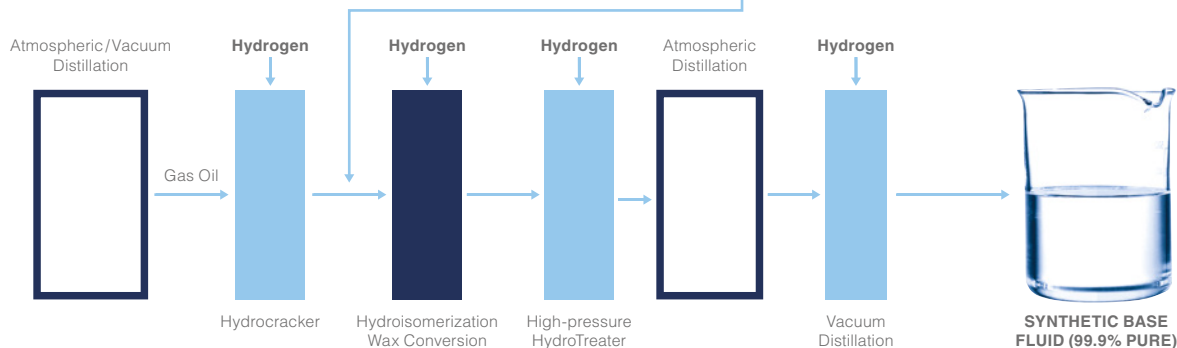
“Our second production unit uses the HT Severe Hydrocracking process, but replaces conventional dewaxing with Hydroisomerization.”

HT Purity Process

Petro-Canada Specialty Products Two-stage Severe Hydrocracking Process



Petro-Canada Specialty Products Two-stage Severe Hydrocracking/Hydroisomerization Process



PURITY™ Base Oils

The clear choice from start to finish

PURITY base oils are ideal for all your blending specifications and needs. Their high-purity, high-VI and low-volatility properties contribute to higher fuel efficiency in engine oils and reduced power consumption in industrial lubricants. A full range of PURITY base oils is readily available to help you optimize cost and/or performance in a wide range of automotive, industrial and specialty lubricants.

PURITY Group II & Group II+ base oils

Achieve synthetic blend performance while reducing dependence on high-cost PAOs. PURITY base oils are excellent blending stocks that can help you meet rigorous industry specifications and are ideal for use in blending and compounding within various lubricant applications.

- Capable of meeting current conventional specifications
- GP II+ excels as an adjustment stock to optimize cost and performance
- Very good response to additives

PURITY Group III VHVI specialty base fluids

Our high-quality Group III base oils are an excellent alternative to more expensive PAOs and Group III+ base oils. They allow you to consistently blend and compound formulations meeting increasingly technical demands of synthetic motor oils and high-performance industrial and specialty lubricants.

- Well-positioned to meet needs of future ultra-low-viscosity grades such as 0W-16
- Outstanding low volatility that allows formulating to severe engine oil specifications
- Excellent response to additives



Excellent
response to
additives

PURETOL™ White Mineral Oils & KRYSTOL™ Technical White Mineral Oils

Purity you can count on

Petro-Canada Specialty Products is one of the largest white mineral oil manufacturers in the world. Our highly refined, colourless and odourless white mineral oils meet the rigorous standards of a wide range of industries and applications.

PURETOL white mineral oils

With a comprehensive range of viscosity grades, PURETOL white mineral oils are perfectly suited to meet the needs of formulations for personal care products, cosmetics and food processing applications. Our credentials include:

- Meet European Pharmacopoeia (Ph. Eur.) requirements
- United States Pharmacopeia (USP) mineral oil and National Formulary (NF) light mineral oil grades
- Meet FDA 21 CFR 172.878 and FDA 21 CFR 178.3620(a) requirements for direct and indirect food contact
- Select PURETOL grades are NSF International HX-1 registered for blending high-performance food grade lubricants
- Kosher Pareve and Halal

KRYSTOL technical white mineral oils

Our grades of KRYSTOL technical white mineral oils are ideally suited to a wide variety of industries, including plastics, chemicals and adhesives. Our credentials include:

- FDA 21 CFR 178.3620(b) for indirect food contact
- Kosher Pareve and Halal

Puretol™
White Mineral Oil

Other High-value Specialty Fluids

PARAFLEX™ HT Process Oils

Crystal-clear, virtually nontoxic PARAFLEX HT process oils are essentially composed of saturated hydrocarbons with virtually no undesirable polar compounds or impurities. With carefully controlled hydrocarbon content, PARAFLEX process oils are ideal for use as a raw material or ingredient in a wide range of industrial products, including rubber and plastics, leather, adhesives, polishes, plate glass and glass wool.

PARAFLEX offers:

- Good thermal stability
- Low carbon residues
- Superior separation from water
- Low aromatic levels

PUREDRILL™ Drilling Mud Base Fluids

Specially designed to increase drilling productivity while providing protection in environmentally sensitive areas, PUREDRILL fluids are ideal for both on- and offshore drilling operations. Unlike distillate and diesel fluids, PUREDRILL is extremely inert towards elastomer components typically used in petroleum and hydrocarbon processing. That means greater protection against downtime caused by equipment failure. And because PUREDRILL is virtually nontoxic and biodegradable, it helps maximize drilling efficiency while improving rig worker health and safety and minimizing environmental impacts.

PUREDRILL offers:

- Increased lubricity and hole stability
- Enhanced rates of penetration
- Excellent low-temperature fluidity
- Reduced risk; faster and safer cleanup
- Helps eliminate skin and eye irritation

Continuous Quality

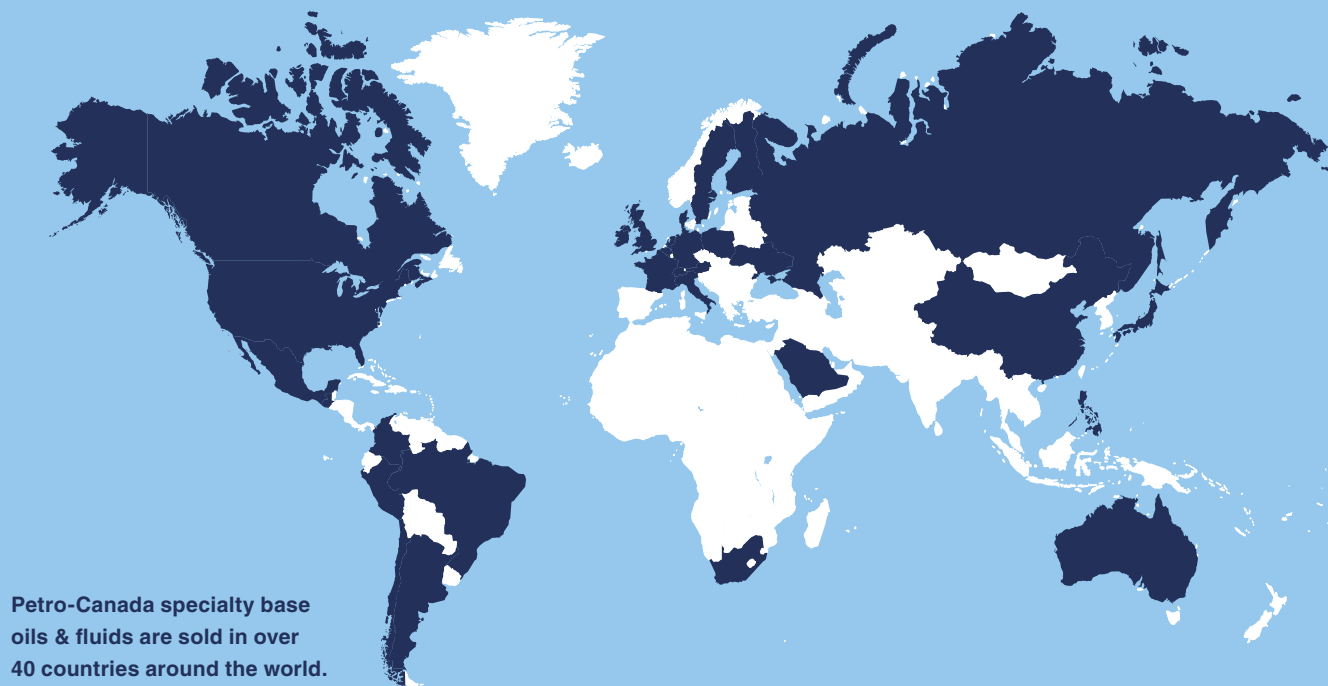
Our commitment to quality drives everything we do. We meet or exceed the demanding criteria of every industry we serve. We were the first lubricants manufacturer in North America certified ISO 9001 and first in the world certified to the international automotive standard IATF 16949. We are also certified to the globally recognized ISO 14001 standard as a demonstration of commitment to the environment.

Reliable Supply

Petro-Canada Specialty Products operates the first Group III refinery in North America. We're also one of the largest white oil producers in the world, with dedicated infrastructure and distribution processes that preserve product purity from start to finish. Today our products are performing for many of the world's leading companies, in virtually every industry and in over 80 countries around the globe. With our strategically designed distribution network, we are able to offer reliable bulk shipments through rail, truck or marine in order to meet your needs.

Valuable Partnerships

We believe more is possible when we share and collaborate with our customers. We conduct a comprehensive analysis of your needs and identify areas where we can add value or help reduce operating costs. With world-class research and development, the experience and foresight of a dedicated technical services team, and the most knowledgeable salespeople, we provide unparalleled access to industry expertise that can help make your business more efficient.



Finished Lubricants

Using ultra-pure basestocks as a foundation, Petro-Canada Lubricants blends and packages more than 350 different lubricants, specialty fluids and greases. Exporting to over 80 countries on six continents, Petro-Canada Lubricants specializes in offering our customers products and services proven to maximize equipment performance, productivity and overall savings. From heavy-duty engine oils to hydraulic fluids, from automatic transmission fluids to gear oils and greases, Petro-Canada Lubricants is a one-stop solution for a world of needs.

Contact us at lubecsr@petrocanadalsp.com
Find out more at lubricants.petro-canada.com

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