



HYDREX* EXTREME WIDE TEMPERATURE HYDRAULIC FLUID

Introduction

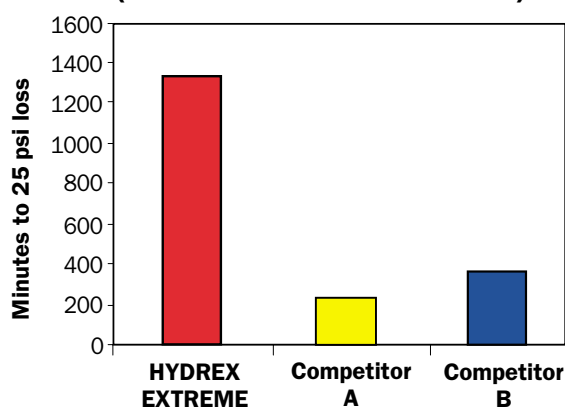
Petro-Canada's HYDREX EXTREME is a premium quality, high performance hydraulic fluid designed for extremely wide temperature protection for high and severe low temperatures.

HYDREX EXTREME hydraulic fluid starts with the patented HT purity process to produce 99.9% pure base oils. These crystal-clear fluids are free of impurities that can hinder the performance of competitive conventional oils. Utilizing more than 25 years of formulating experience, Petro-Canada fortifies these fluids with specially selected additives to provide a hydraulic fluid that lasts longer and has an extremely wide operating temperature range.

Features and Benefits

- **Wide temperature protection**
 - Outstanding low temperature flow characteristics allow start-up as low as -49°C (-56°F) to operating temperatures as high as +64°C (147°F)
 - Eliminates seasonal change-outs reducing inventory costs, downtime and chance of misapplication
- **Superior oxidation stability**
 - Longer oil life helps extend time between oil changes reducing downtime and costs
 - Minimizes sludge build-up that can lead to wear and shorter filter life
 - Helps reduce harmful varnish deposits to ensure smooth reliable operation of hydraulic valves and actuators

Oxidation Life Comparison (RPVOT Test - ASTM D2272)



HYDREX EXTREME hydraulic fluid provides stronger resistance to oxidative breakdown vs the competition

- **Excellent anti-wear characteristics**
 - Extends equipment life for reduced maintenance and downtime
- **Excellent rust and corrosion protection**
- **Excellent water separability and hydrolytic stability**
- **Contains no heavy metals such as barium or zinc to help minimize environmental effects including waste water contamination**

What is the HT difference?

Petro-Canada starts with the patented 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.



Applications

Petro-Canada's HYDREX EXTREME hydraulic fluid is recommended for vane, gear and axial piston hydraulic pumps over an extremely wide range of operating temperatures. It is suitable for applications where systems must be started up at very low temperatures but have higher temperatures during operation. It is also suitable for use in bucket trucks operating around power lines or in bucket truck hydraulic systems requiring extreme low temperature pumpability.

HYDREX EXTREME is approved for use in Liebherr Cranes and is suitable for use in equipment manufactured by:

- Eaton Vickers
- Hagglands
- Denison
- Sauer-Danfoss
- Bosch-Rexroth
- Racine
- Oilgear
- Hydreco
- Dynex
- Others

Typical Performance Data

PROPERTY	ASTM TEST METHOD	HYDREX EXTREME
Start-up Temperatures ¹ , °C (°F)	-	-49 (-56)
Operating Temperature Range ² , °C (°F)	-	-32 to +64 (-26 to +147)
Density, kg/L at 15°C (60°F)	D4052	0.8469
Viscosity, cSt at 40°C (SUV @ 100°F)	D445	33.25 (164)
cSt at 100°C (SUV @ 210°F)		11.25 (64)
cP at -40°C (-40°F)	D2983	1,520
Viscosity Index	D2270	353
Flash Point, °C (°F)	D92	127 (261)
Pour Point, °C (°F)	D97	-54 (-65)
Rust Test, Procedure A&B, 24 hours	D665	Pass
Water Separability, 54°C (129°F)	D1401	40-40-0 (15)
Dielectric Breakdown Voltage, kV	D877	51

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

1 Start-up is defined by the temperatures at which the oil viscosity is 10,000 cP.

2 Operating temperature limits are determined by the equipment manufacturer. Petro-Canada has chosen to define the upper and lower operating temperatures to be the temperatures at which the oil viscosity is 13 cSt and 750 cP, respectively.

Health and Safety

HYDREX EXTREME has no adverse affect on health provided it is used as directed. To obtain Material Safety Data Sheets (MSDS), contact one of our TechData Info Lines.

TechData Info Lines

If you would like to know more about Petro-Canada's HYDREX EXTREME, or any other product in our complete line of quality lubricants, please contact us at:

**Petro-Canada
Lubricants Centre
385 Southdown Road
Mississauga, Ontario
L5J 2Y3**



Canada - West Phone 1-800-661-1199
- East (English) Phone 1-800-268-5850
(French) Phone 1-800-576-1686

Other Areas Phone (416) 730-2408
E-mail lubecsr@petro-canada.ca
Internet www.petro-canada.com

**Petro-Canada Europe Lubricants
The Manor, Haseley Business Centre
Warwick, Warwickshire
CV35 7LS**

United Kingdom
 Phone +44 (0) 2476-247294
 Fax +44 (0) 2476-247295

**Petro-Canada America Lubricants
980 North Michigan Avenue
Suite 1400, #1431
Chicago, Illinois
USA 60611**

Phone 1-888-284-4572
 Fax (708) 246-8994
 E-mail email@petro-canadaamerica.com