



## HYDREX\* AW HYDRAULIC FLUIDS

### Introduction

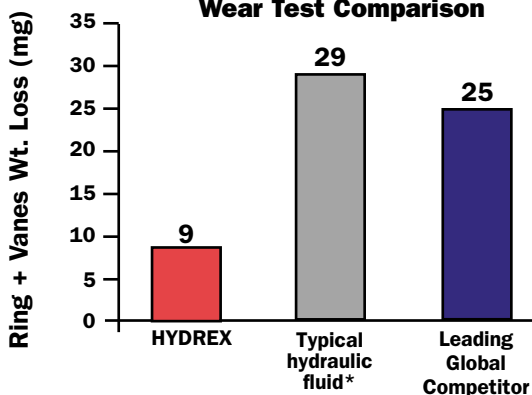
Petro-Canada's HYDREX\* AW hydraulic fluids are advanced formula, long life, anti-wear hydraulic fluids designed for high performance hydraulic systems to provide excellent operating and maintenance benefits for increased productivity. HYDREX AW takes your equipment to higher levels of performance.

HYDREX AW hydraulic fluids start with the patented HT purity process to produce 99.9% pure, crystal clear base oils. By removing the impurities that can hinder the performance of competitive conventional oils, and blending in our specialty additives, HYDREX AW retains its 'fresh oil' properties longer providing resistance to oxidative breakdown and superior wear protection.

### Features and Benefits

- **Superior anti-wear protection**
  - Extends equipment life
  - Reduces maintenance and mechanical failure
  - Protects equipment being driven longer, harder and faster in tougher conditions
  - Improves operating reliability over a wide range of pressures

**Vickers 35VQ25 Hydraulic Pump  
Wear Test Comparison**



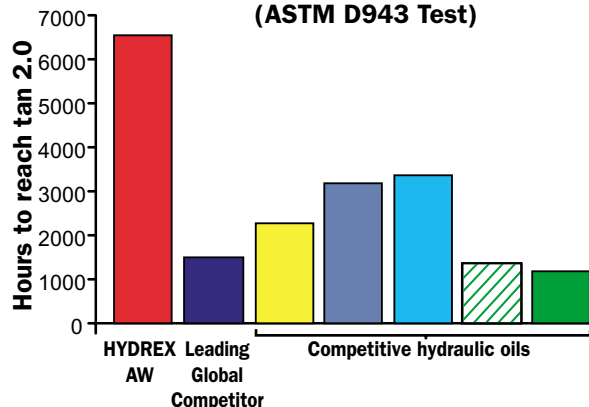
\* Average of 13 products tested

HYDREX provides 2x better wear protection than the leading global competitor.

- **Outstanding oxidation and thermal stability**

- Longer oil life which helps extend drain intervals for reduced change-out costs and less reservoir exposure to external contaminants
- Resists degradation (breakdown) in high temperatures reducing need for additive top up
- Minimizes sludge build up in the reservoir that can lead to wear and shorten filter life
- Decreases varnish build up that can interfere with servo and directional valve operation

**Oxidation Life Comparison  
(ASTM D943 Test)**



HYDREX AW lasts 3x longer than the leading global competitor

- **Improved rust and corrosion prevention**

- Iron and other metal components protected against water damage

- **Excellent water separability and hydrolytic stability allows oil to be reused**

- Oil separates readily from water without loss of performance additive

- **Improved foam and air entrainment performance**

- Prevents overflowing of reservoirs
- Eliminates "sponginess" from hydraulic systems and prevents pump cavitation

#### 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

HYDREX AW hydraulic fluids are primarily recommended for heavy duty hydraulic systems that operate in industrial plants and outdoors in mobile equipment. HYDREX AW fluids may be used in systems equipped with fine filters down to 3 microns without loss of additives or causing filter plugging.

Because of their wide applicability, long life, rust and foaming inhibiting features, HYDREX AW fluids may also be used to lubricate anti-friction bearings and gears found in circulation, splash, bath and ring-oiled systems.

HYDREX AW fluids are approved against the following hydraulic equipment manufacturers' specifications:

- Denison HF-0
- Eaton Vickers M-2950-S and I-286-S

- Cincinnati-Machine P-68 (AW 32), P-69 (AW 68) and P-70 (AW 46)
- Haggglunds AC-4.8
- Bosch-Rexroth

HYDREX AW fluids are recommended for use in equipment manufactured by Eaton Vickers, Haggglunds, Denison, Sauer-Danfoss, Bosch-Rexroth, Racine, Oilgear, Hydreco, Dynex and others.

HYDREX AW 22 meets DIN 51524 Part 1 HL and HYDREX AW 32, 46, 68, 80 and 100 meet DIN 51524 Part 2 HLP. HYDREX AW 32, 46 and 68 are classified as CFIA – Type N2, NSF International H2 and are GM LS2 approved. HYDREX AW fluids meet ISO 6743/4 Type HM and the USS 127 specification.

## Typical Performance Data

PROPERTY	TEST METHOD	HYDREX AW					
		22	32	46	68	80	100
HYDREX Viscosity Grade	–	22	32	46	68	80	100
<sup>1</sup> Flash Point, °C / °F	D92	207/405	217/423	227/441	225/437	245/437	250/482
Viscosity, cSt @ 40°C	D445	21.6	31.5	45.7	68.4	80	100
cSt @ 100°C		4.3	5.3	6.7	8.5	9.7	11.3
SUV @ 100°F		106	151	219	315	389	440
SUV @ 210°F		40	43	49	54	60	63
Viscosity Index	D2270	101	98	100	99	99	99
Pour Point, °C / °F	D97	-45/-49	-39/-38	-36/-33	-33/-27	-24/-11	-30/-22
Rust Procedures A & B, 24 hr	D665	Pass	Pass	Pass	Pass	Pass	Pass
Oxidation Stability, hours	D943	6500+	6500+	6500+	6500+	6500+	6500+
Oxidation Stability, mg sludge	D4310	Pass	66	71	Pass	Pass	Pass
Hydraulic Stability, copper loss, mg/cm <sup>2</sup>	D2619	Pass	0.17	0.10	Pass	Pass	Pass
Dielectric Breakdown, Voltage, kV	D877	44	44	44	44	44	44
Four-Ball Wear Test, Scar Diam. (mm)	D4172	0.5	0.4	<0.4	<0.4	<0.4	<0.4
Water Separability, 54°C / 129°F mL water (minutes)	D1401	40-40-0 (10)	40-40-0 (25)	40-40-0 (10)	40-40-0 (20)	40-38-2 (30)	40-40-0 (5) <sup>1</sup>

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

<sup>1</sup> At 82°C (180°F)

## Health and Safety

HYDREX AW hydraulic fluids have no adverse affect on health provided they are 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 AW hydraulic fluid, 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**



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