



FUELS · LUBRICANTS · CHEMICALS

THOMAS PETROLEUM, LTD.

Home Office  
9701 U.S. HWY 59 North (77905)  
P.O. Box 1876 (77902-1876)  
Victoria, TX

Tel: 361-573-7662  
Fax: 361-573-9477  
[www.thomaspetro.com](http://www.thomaspetro.com)

Victoria 361-573-7443  
Rio Grande Valley 956-399-0395  
La Grange 979-242-3958  
Laredo 956-717-0495  
Corpus Christi 361-387-7275  
Beaumont 409-729-4868  
Permian Basin 432-561-8098  
Tyler 903-592-6851  
Hobbs, NM 505-492-0058  
Lafayette, LA

# AW HYDRAULIC OILS

## ISO 46, 68

### CUSTOMER BENEFITS

AW Hydraulic Oils deliver value through:

- **Good oxidation stability** — Longer service life than with conventional lubricants in high pressure applications.
- **Rust and corrosion protection** — Provides excellent protection against corrosion of steel and copper.
- **Minimal viscosity change** over a wide range of temperatures.
- **Excellent Foam suppression** — Contains effective foam suppressant, which eliminates aeration and foaming problems.
- **Excellent antiwear performance**
- **Passes all major pump manufacturer's requirements** — ISO 46 and 68 meet the requirements of hydraulic pump manufacturers for anti-wear hydraulic oils in piston- and vane-type pumps.
- **Good stability in the presence of water** by the Denison HF-0, Vickers M-2950-S, and Cincinnati Milicron P-68, P-69, P-70.
- **Excellent thermal stability** in the presence of copper and steel.
- **Quick water separation** — Minimizes rust problems.
- **Excellent filterability** — Excellent hydrolytic and thermal stability prevents formation of deposits which can interfere with filtration in equipment with close tolerances.

### FEATURES

AW Hydraulic Oils are manufactured to give maximum hydraulic pump protection.

AW Hydraulic Oils are formulated with highly refined paraffinic base oils with a high Viscosity Index. They provide excellent anti-wear protection, oxidation and corrosion inhibition, as well as foam and aeration suppression.

Both grades have excellent demulsibility characteristics.

The anti-wear additives in AW Hydraulic Oils create a protective film on the metal surfaces, which minimizes metal-to-metal contact, most severe in vane- and gear-type pumps. As hydraulic pressures exceed 1000 psi, the need for anti-wear protection increases proportionally.

### APPLICATIONS

AW Hydraulic Oils are versatile lubricants formulated in ISO viscosity grades of 46 and 68.

**ISO 46** and **68** are most commonly used for hydraulics with vane-, piston-, or gear-type pumps, especially where pressures surpass 1000 psi.

AW Hydraulic Oils meet AGMA Specification 1 (ISO 46) and Specification 2 (ISO 68).

AW Hydraulic Oils **ISO 46** and **68**:

- meet all major pump manufacturer requirements including **Vickers** I-286-S, M 2950-S, 35VQ-25; and **Racine** Model S.

Typical Test Data - AW Hydraulic Oils

ISO Grade	46	68
API Gravity @ 60°F	29.0	28.7
AGMA Grade	1	2
Viscosity, Kinematic		
cSt at 40°C	44.2	66.2
cSt at 100°C	6.6	8.5
Viscosity Index	98	95
Flash Point, °C(°F)	213(415)	218(425)
Pour Point, °C(°F)	-29(-20)	-26(-15)
Oxidation Stability, ASTM D 943, Hrs	>3000	>3000
Neutralization Number, ASTM D 974	0.55	0.55
Rust Test, ASTM D 665 A & B	No Rust	No Rust
Demulsibility, ASTM D 1401	Pass	Pass
*Dielectric Strength, ASTM D 877 (in a clean dry system)	30KV+	30KV+

The values shown are typical of current production. Some are controlled in the manufacturing process, while others are not. All of them may vary within tolerable ranges.

\*ASTM D 877, "Dielectric Breakdown Voltage of Insulating Liquids" will exceed 30 Kilovolts (providing customer storage and containment are free of moisture under all conditions.) These hydraulic oils meet performance requirements of Denison HF-0, Vickers M-2950-S, and Cincinnati Milicron P-68, P-69, and P-70.



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## Competitive Comparison

Comparable means that the products have similar performance in the applications for which they were designed. It does not mean that they are compatible. When replacing lubricants, our recommendation is to drain and flush the system prior to filling with the new product.

	<b>Thomas Hydraulic Oil AW ISO 46</b>	<b>*Chevron Hydraulic Oil AW ISO 46</b>	<b>**Mobil Hydraulic Oil AW 46</b>
<b>Typical Test Data</b>			
<b>ISO Grade</b>	<b>46</b>	46	46
<b>AGMA Grade</b>	<b>1</b>	1	1
<b>API Gravity @ 60°F</b>	<b>29.0</b>	31.8	29.7
<b>Viscosity, Kinematic</b>			
<b>cSt at 40°C</b>	<b>44.2</b>	43.7	46
<b>cSt at 100°C</b>	<b>6.6</b>	6.5	6.7
<b>Viscosity Index</b>	<b>98</b>	98	95
<b>Flash Point, °C (°F)</b>	<b>213(415)</b>	226(439)	212(413)
<b>Pour Point, °C (°F)</b>	<b>-29(-20)</b>	-30(-22)	-18(0)
<b>Oxidation Stability</b>			
<b>TOST, ASTM D 943, minute</b>	<b>&gt;3000</b>	>2000	1500

Typical test data are average values only. Minor variations which do not reflect product performance are to be expected in normal manufacturing.

\*Source - <https://www.cbest.chevron.com/msdsServer>

\*\*Source - <http://www.exxonmobil.com/pdssearch/search.asp>