

# CITGO HYDURANCE® AW ALL TEMP FLUIDS



Date 12/15

**DESCRIPTION:** CITGO HyDurance AW All Temp Fluids are superior, high viscosity index, anti-wear hydraulic and circulating oils specially formulated to provide outstanding resistance to sludge formation, are chemically stable, and exhibit excellent anti-wear protection and filterability, and can be used over wide temperature ranges.

**QUALITIES:** CITGO HyDurance AW All Temp Fluids are formulated with high quality base stocks and premium additive components to offer trouble-free service in high-pressure, high-output industrial hydraulic circuits.

CITGO HyDurance AW All Temp Fluids offer:

**Thermal Stability:** Superior resistance to heat-related sludging in sensitive electro-hydraulic servos.

**Hydrolytic Stability:** Will not contribute to the formation of metal-etching acids or corrosive reactants.

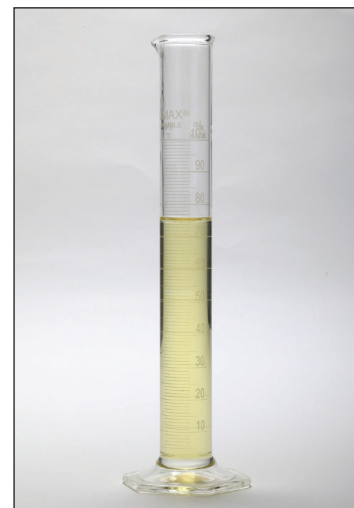
**Rust and Corrosion Protection:** Inhibited against rusting in both fresh and sea water and pass both A and B Procedures of the ASTM D665 Rust Test.

**Wear Protection:** Excellent anti-wear protection to pumps, motors, valves, and other hydraulic circuit components. Approved against stringent equipment performance requirements.

**Anti-Foam Performance:** Resistant to foaming and will not foster abnormal air entrainment in properly designed hydraulic circuits.

**Demulsibility:** Readily separate water permitting draining of contaminating water from circulating systems.

**Excellent Filterability:** Premium performance in wet and dry filterability testing.



CITGO HyDurance® AW  
All Temp 46 Fluid

(Continued)

CITGO HYDURANCE® AW  
ALL TEMP FLUIDS



Date 12/15 - (Continued)

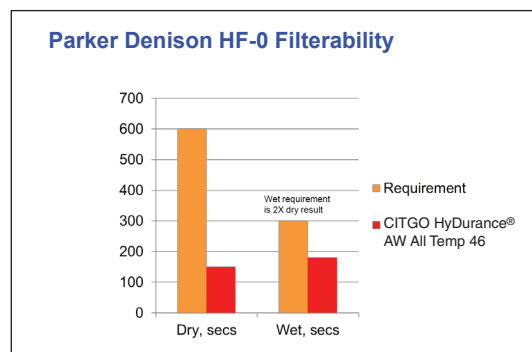
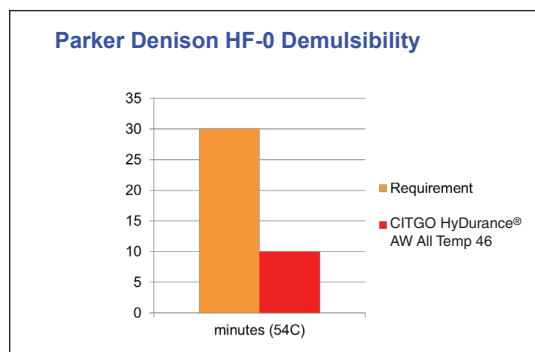
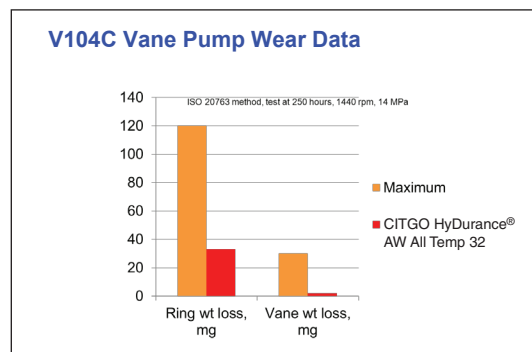
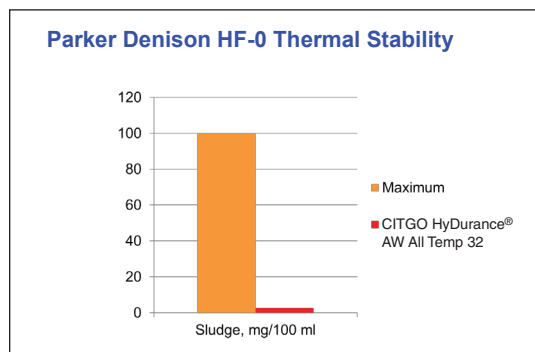
**APPLICATIONS:** CITGO HyDurance AW All Temp Fluids are recommended for service in industrial and mobile hydraulic systems when used in accordance with equipment manufacturers' recommendations. They are designed to provide maximum service life to vane, piston, and gear pumps as well as other circuit components such as motors and servos.

CITGO HyDurance AW All Temp Fluids are also recommended for use as a gear and bearing lubricant in industrial applications where rust and oxidation inhibited oils are required.

CITGO HyDurance AW All Temp 32 Fluid is a special multigrade anti-wear fluid meeting FMC Hi-Performance Hydraulic Oil Grade 32 requirements. CITGO HyDurance AW All Temp Fluids 32 and 46 offer excellent low temperature pumpability and are recommended for use in mobile and other hydraulic equipment in heavy duty all weather service.

CITGO HyDurance AW All Temp Fluids meet:

- ASTM D6158 HM (2014)
- SO 11158 HV (2009)
- DIN 51524-3 HVLP (2006)
- General Motors LS-2 (1997)
- Eaton Brochure 03-401-2010
- Parker Denison HF-0 (Revision J)
- JCMAS HK P041 (2004)
- US Steel 126, 127, 136
- SEB 181 222 (2007)



(Continued)

CITGO HYDURANCE® AW  
ALL TEMP FLUIDS



Date 12/15 - (Continued)

**TYPICAL PROPERTIES:**

**CITGO HYDURANCE® AW ALL TEMP FLUIDS**

GRADE	32 <sup>(1)</sup>	46
Material Code	633621001	633622001
ISO VG No.	32	46
Gravity, ASTM D4052, °API	33.4	32.3
Density, lb/gal	7.15	7.20
Flash Point, ASTM D92, COC, °F (°C)	385 (196)	423 (217)
Viscosity, cP at -40°C <sup>(2)</sup>	13,900	39,770
cP at -35°C <sup>(2)</sup>	7,200	18,400
cP at -20°C <sup>(2)</sup>	—	2,424
cSt at 40°C	31.2	46.9
cSt at 100°C	6.31	8.1
Viscosity Index	159	147
FZG (A/8.3/90), pass load, ISO 14635-1	12	12
Pour Point, ASTM D97, °F (°C)	-54 (-48)	-49 (-45)
Color, ASTM D1500	L1.0	L1.0
Water Separability, ASTM D1401	40-40-0	40-40-0 (15)
Oxidation Test, ASTM D943, Hrs.	4800	>4800
Rust Test, ASTM D665 A, B <sup>(3)</sup>	Pass	Pass

- Notes:** (1) Meets FMC Hi-Performance, Hydraulic Oil, Grade 32 requirements.  
 (2) ASTM D2893 Brookfield Viscosity.  
 (3) Pass - No Rust.

CITGO and HyDurance are registered trademarks of CITGO Petroleum Corporation. All other registered trademarks or trademarks are the property of their respective owners.