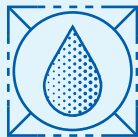




CITGO® HyDurance® AW

All Temp Fluids

OVERVIEW



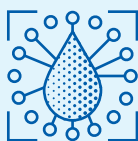
- Superior, high viscosity index, anti-wear hydraulic and circulating oils formulated to provide excellent service in high-pressure, high-output industrial hydraulic circuits over wide temperature ranges.
- Chemically stable with outstanding resistance to sludge formation. Excellent anti-wear protection and filterability.

FEATURES & BENEFITS



- Formulated with high-quality base stocks and premium additive components.
- Thermal stability for superior resistance to heat-related sludging in sensitive electro-hydraulic servos.
- Good hydrolytic stability means they will not contribute to the formation of metal-etching acids or corrosive reactants.
- Inhibited against rusting in both fresh and sea water, passing both A and B Procedures of the ASTM D665 Rust Test.
- Excellent anti-wear protection to pumps, motors, valves, and other hydraulic circuit components. Approved against stringent equipment performance requirements.
- Resistant to foaming and will not foster abnormal air entrainment in properly designed hydraulic circuits.
- Superior demulsibility to readily separate water, permitting draining of contaminating water from circulating systems.
- Premium performance in wet and dry filterability testing.

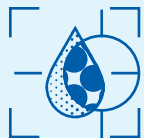
APPLICATIONS



- Recommended for service in industrial and mobile hydraulic systems when used in accordance with equipment manufacturers' recommendations.
- 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 multi-grade anti-wear fluids suitable for boom cranes, excavators, and hydraulic lifts.
- 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.
- Recommended for equipment requiring the following specifications:

ASTM D6158 HM	Parker Denison HF-0
ISO 11158 HV	JCMAS HK P041
DIN 51524-3 HVLP	US Steel 126, 127, 136
General Motors LS-2	SEB 181 222
Eaton E-FDGN-TB002-E	Bosch Rexroth RDE-90235

PROPERTIES



Typical Properties for CITGO HyDurance AW All Temp Fluids:

Grade	32	46	68
Material Code	633621001	633622001	633620001
Gravity, ASTM D4052, °API	34.2	32.3	31.6
Density, lb/gal	7.12	7.20	7.23
Flash Point, ASTM D92, COC, °F (°C)	385 (196)	423 (217)	399 (204)
Viscosity, ASTM D445			
cSt at 40°C	31.2	46.9	68
cSt at 100°C	6.31	8.1	10.8
Viscosity Index, ASTM D2270	159	147	149
Brookfield Viscosity, ASTM D2983			
cP at -40°C	13,900	39,770	—
cP at -35°C	7,200	18,400	59,500
cP at -20°C	—	2,424	4,660
FZG (A/8.3/90), pass load, ISO 14635-1	12	12	12
Pour Point, ASTM D97, °F (°C)	-54 (-48)	-49 (-45)	-44 (-42)
Color, ASTM D1500	L1.0	L1.0	L1.0
Water Separability at 54°C, ASTM D1401	40-40-0	40-40-0	40-40-0
Oxidation Test, ASTM D943, Hrs.	4800	>4800	4800
Rust Test ASTM D665 A, B	Pass	Pass	Pass

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