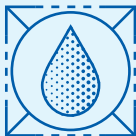




CITGO® A/W Hydraulic Oils

OVERVIEW



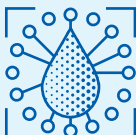
- Superior anti-wear hydraulic and circulating fluids designed for service in high-pressure, high-output industrial hydraulic circuits and specially formulated with thermally stable additives.
- Outstanding chemical stability, resistance to sludge formation, and anti-wear protection.

FEATURES & BENEFITS



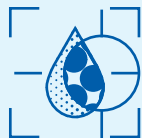
- Thermally stable zinc-based additives protect against heat-related sludge formation in sensitive electro-hydraulic servo valves. Ideal for high-output equipment where sustained heat is prevalent, such as CNC machine tools.
- Inhibited against rust in both fresh and sea water, and pass Procedures A and B of the ASTM D665 Rust Test.
- Resist foaming and will not foster abnormal air entrainment in properly designed hydraulic circuits.
- Readily separate water, allowing water contamination to be drained from the sump.

APPLICATIONS



- Recommended for service in vane, piston, and gear pumps when used in accordance with equipment manufacturers' recommendations.
- Designed to provide excellent service life to pumps and circuit components such as motors and servos.
- Recommended for use as a gear and bearing lubricant in industrial applications where rust- and oxidation-inhibited oils are required.
- Approved against the stringent performance requirements of:
 - Eaton Brochure 03-401-2010 (formerly Vickers 2950-S, I-286-S)
 - Fives Cincinnati P-68, P-69, and P-70
 - Parker Denison HF-O

PROPERTIES



Typical Properties for CITGO A/W Hydraulic Oils:

Grade	32	46	68
Material Code	633491001	633492001	633493001
Gravity, ASTM D4052, °API	32.6	31.2	30.8
Density, lb/gal	7.18	7.24	7.26
Flash Point, COC, ASTM D92, °F (°C)	417 (214)	446 (230)	468 (242)
Viscosity ASTM D445			
cSt at 40°C	32.3	46.6	68
cSt at 100°C	5.59	6.96	9.0
Viscosity Index	111	106	107
Pour Point, ASTM D97, °F (°C)	-27 (-33)	-22 (-30)	-17 (-27)
Color, ASTM D1500	L0.5	L0.5	L0.5
Water Separability, ASTM D1401	40-40-0	40-40-0	40-40-0
Oxidation Test, ASTM D943, Hrs.	5000	5000	5000
Rust Test, ASTM D665 A, B	Pass	Pass	Pass
Eaton Brochure 03-401-2010	Yes	Yes	Yes
Meets Parker Denison HF-O Requirement	Yes	Yes	Yes
Meets Fives Cincinnati Requirement	P-68	P-70	P-69
AFNOR NF E 48-603	HM32	HM46	HM68
ISO VG No.	32	46	68

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