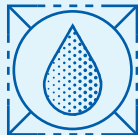




CITGO® HyDurance® AW All Temp NZ Fluids

OVERVIEW



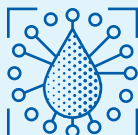
- High performance, zinc-free anti-wear lubricants designed to provide outstanding protection over a wide temperature range.
- Provide outstanding protection for demanding hydraulic systems operating in environmentally sensitive areas.

FEATURES & BENEFITS



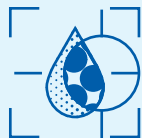
- Superior, high viscosity index, zinc-free, anti-wear hydraulic and circulating oils.
- Provide excellent resistance to sludge formation and exhibit excellent filterability.
- Can be used over a wide temperature range.
- Designed to provide maximum service life to vane, piston, and gear pumps as well as other circuit components such as motors and servos.
- Can be used as a gear and bearing oil.
- Outstanding low temperature performance.
- Excellent resistance to foaming -- will not foster abnormal air entrainment in properly designed hydraulic systems.
- Inherently biodegradable and low acute aquatic toxicity.

APPLICATIONS



- Recommended for high-pressure, high-output industrial hydraulic circuits.
- Recommended for mobile and other hydraulic equipment in heavy duty all-weather service.
- Can be used in circulating systems of machine tools, presses, air compressors, and other gear and bearing applications where rust- and oxidation-inhibited oils are required.
- Meet or exceed the stringent performance requirements of:
 - GM LS-02
 - Eaton E-FDGN-TB002-E
 - AFNOR NF E 48-603 HV
 - DIN 51524 Part 3
 - ISO 11158 HV
 - AIST (U.S. Steel) 126, 127, 136
 - Parker Denison HF-0
- Can be used in applications operating in environmentally sensitive areas where the use of a zinc-free, ashless formulated fluid is desired, such as:
 - Marine – offshore rigs, tugs, dredges, hydraulic lifts, cranes, pile-drivers (note: does not meet EPA 2013 Vessel General Permit VGP EAL requirements).
 - Forestry – scalpers, excavators, wheel loaders.
 - Construction – bulldozers, graders, backhoes.
 - Mining – conveyors, crawlers, hole drillers
- Refer to equipment owner’s manual for proper lubricant recommendation.

PROPERTIES



Typical Properties for CITGO HyDurance AW All Temp NZ Fluids:

Material Code	633612001	633613001	633614001
ISO Vis Grade	32	46	68
Gravity, ASTM D4052, °API	34.5	33	31
Density, lbs/gal at 60°F	7.1	7.17	7.25
Specific Gravity at 60°F, ASTM D1298	0.8523	0.8602	0.8708
Flash Point, COC, ASTM D92, °F (°C)	401 (205)	403 (206)	453 (234)
Pour Point, ASTM D97, °F (°C)	-60 (-51)	-49 (-45)	-44 (-42)
Brookfield Viscosity, ASTM D2983			
cP at -20°C	–	2688	4650
cP at -30°C	2260	9680	17670
cP at -40°C	11360	–	–
Viscosity, ASTM D445			
cSt at 40°C	32	46	69
cSt at 100°C	6.1	7.9	11.2
Viscosity Index, ASTM D2270	140	146	155
Water Separability at 54°C, ASTM D1401	40-40-0	40-40-0	40-40-0
Four Ball Wear, ASTM D4172, 40kg, mm	0.70	0.55	0.49
Rust Test, ASTM D665, A and B	Pass	Pass	Pass
Copper Corrosion, ASTM D130	1A	1A	1A
Oxidation Stability, ASTM D943, Hrs	6000	6000	6000

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