



CITGO A/W HYDRAULIC OILS NZ

Date 2/09

DESCRIPTION: CITGO A/W Hydraulic Oils NZ are formulated with premium paraffinic base oils and ashless antiwear additives to provide outstanding protection for demanding systems. CITGO A/W Hydraulic Oils NZ do not rely on zinc-type antiwear additives which is an important consideration since zinc compounds are regulated as priority pollutants under provisions of the Clean Water Act and SARA Title 313.

- BENEFITS:**
- Formulated without zinc containing additives.
 - Exhibit thermal stability to virtually eliminate heat-related sludge deposits.
 - Provide rust and corrosion protection.
 - Separate readily from water.
 - Contain inhibitors to minimize foaming and air entrainment.
 - Provide antiwear protection to pumps, motors and other hydraulic circuit components.
 - Offer extended fluid service life with a balanced additive system to handle severe operating conditions.
 - NZ HVI 46 meets Hitachi OEM requirements and is recommended for use in Hitachi excavators with 4,000 hour service intervals.

APPLICATIONS: CITGO A/W Hydraulic Oils NZ offer the optimum in non-zinc antiwear protection to vane, piston, and gear pumps, motors, valves, and other hydraulic circuit components when used in accordance with the manufacturer's recommendations. They exceed the stringent performance requirements of Denison HF-O and Eaton (formerly Vickers) M-2950-S and I-286-S and are approved against Cincinnati Lamb (formerly Cincinnati Milacron) P-69 (ISO 68) and P-70 (ISO 46). They may also 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.

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TYPICAL PROPERTIES:

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Grade	HVI 46	68
Material Code	633462	633463
Gravity, ASTM D 4052, °API	30.8	29.3
Density, lb/gal	7.26	7.33
Flash Point, ASTM D 92 (COC) °C (°F)	206 (403)	242 (468)
Viscosity, cSt at 40°C	46	68
cSt at 100°C	7.9	8.5
SUS at 100°F	229	352
SUS at 210°F	53	55
Viscosity Index, ASTM D 2270	144	94
Brookfield Viscosity @-20 °C, cP, ASTM D2983	3230	—
Pour Point, ASTM D 97, °C (°F)	-36 (-33)	-24 (-11)
Color, ASTM D 1500	L1.5	L1.5
Total Acid No., ASTM D 664, mgKOH/g	0.5	0.10
Copper Corrosion, ASTM D 130, 3h at 100°C	1A	1A
Rust Test, ASTM D 665 A, B	Pass	Pass
Four Ball Wear, ASTM D 4172, at 40 kg, mm	0.55	0.50
Foam Test, Seq. I, ml	0-0	0-0
Seq. II, ml	0-0	20-0
Seq. III, ml	0-0	0-0
Water Separability, ASTM D 1401, at 130°F	40-40-0	40-40-0
Zinc, ppm	<25	<25