

**PREMIUM HD “ASHLESS” HYDRAULIC OILS**

ISO Grades 22, 32, 46, 68, 100

**Product Description**

These five premium-quality anti-wear ashless hydraulic oils with excellent stability are designed to meet the most stringent requirements of most of all the major manufacturers and users of hydraulic equipment in environmentally sensitive areas. These oils are characterized by providing rust protection, low deposit formation, rapid release of entrained air and low pour points. They contain an effective ashless (zinc-free) additive system that has excellent resistance to oxidation at intermittent elevated temperatures as high as 500°F and substantially help reduce long-term wear in high-speed, high-pressure vane and gear pumps. HD ashless hydraulic oils are compatible with steel, brass, zinc, aluminum, cadmium, magnesium, and copper. The additive system, on decomposition, will form oil soluble by-products, whereas other antiwear additives may form oil insoluble by-products, leading to ash formation.

**Applications**

Recommended for vane, gear, and piston-type pumps where operating pressures may exceed 3000 psi. These ashless hydraulic oils are very effective in reducing vane and gear pump wear and greatly extend the life of systems operating at high loads, speeds, and temperatures. In a clean dry system, typical value\*\* for ASTM D-877, "Dielectric Breakdown Voltage of Insulating Liquids" will exceed 30 Kilovolts. These hydraulic oils meet performance requirements of Denison HF-0, Vickers M-2950-S and Cincinnati Milacron P-68, P69, and P-70. \*\*Application ISO Grades 22, 32, 46, & 68 meet dielectric strength test results described in ASTM D-877 @ 30KV+ providing customer storage and containment are free of moisture under all conditions. The high dielectric strength makes it suitable for non-conductive hydraulic applications.

**Typical Properties**

Property	ISO 22	ISO 32	ISO 46	ISO 68	ISO 100
Viscosity, cSt @ 40°C	22.0	30.2	44.2	66.2	93.8
Viscosity, cSt @ 100°C	4.3	5.2	6.6	8.5	10.6
Viscosity Index	100	100	98	95	95
Flash Point, COC (°F)	385	390	415	425	450
Pour Point (°F)	-30	-25	-20	-15	-0
Neutralization No., ASTM D 974	0.55	0.55	0.55	0.55	0.55
Gravity, API @ 60°F	31.0	30.0	29.0	28.7	28.3
Oxidation Life, ASTM D 943 (hrs)	+5500	+5500	+5500	+5500	+5500
Rust Test, ASTM D-665 A & B	No Rust	No Rust	No Rust	No Rust	No Rust
Demulsibility, ASTM D-1401	Pass	Pass	Pass	Pass	Pass
Dielectric Strength, ASTM D 877	30KV+	30KV+	30KV+	30KV+	-----

\*The values shown are typical of current production. Some are controlled in the manufacturing process while others are not. All of them may vary within tolerable ranges.