



## Ecoterra™ Hydraulic Fluid HVI 46

Conoco Ecoterra™ Hydraulic Fluid HVI 46 Fluid is a premium quality, zinc-free, multi-viscosity hydraulic oil specifically formulated for use in the hydraulic systems of off-road equipment manufactured by Hitachi, John Deere and other OEMs recommending a zinc-free hydraulic oil.

Ecoterra™ Hydraulic Fluid HVI 46 meets the performance requirements of Hitachi Advanced Hydraulic Oil and is fully compatible with it and with Hitachi seals and hoses. It outperforms conventional zinc-containing hydraulic oils at low and high temperatures.

Ecoterra™ Hydraulic Fluid HVI 46 is formulated with premium hydrocracked base oils and fortified with proprietary ashless additives. It provides excellent wear protection, oxidation resistance, and rust and corrosion protection, as well as excellent water separation and good foam resistance. Its high viscosity index ensures outstanding performance over a wide temperature range.

### **Applications**

- Hitachi excavators with 4000-hour service intervals
- Hydraulic systems of excavators, backhoes, bulldozers, crawlers, skid steers, front-end loaders, wheel loaders, motor graders, compaction equipment and forestry equipment, where the manufacturer recommends a zinc-free hydraulic fluid

Ecoterra™ Hydraulic Fluid HVI 46 meets the performance requirements of:

- Bosch Rexroth RE 90 220
- Cincinnati Lamb Specification P-70
- Denison HF-0, HF-1, HF-2
- DIN 51524 Part 3, Antiwear Hydraulic Oils, Type HVLP
- General Motors LS-2
- German Steel Industry SEB 181222
- ISO 11158:1997 for Hydraulic Fluids, Family H
- U.S. Steel 126, 127, 136
- Vickers (Eaton) M-2950-S, I-286-S

**Premium Ashless Hydraulic Oil For Hitachi And John Deere Off-Road Equipment**

**U.S. Technical Services Hot line:**  
**1-800-255-9556**

**U.S. Customer Service:**  
**1-800-640-1956**

**International:**  
**+1-832-486-3363**

**Asia-Pacific:**  
**tel: (65) 6536-0010**  
**fax: (65) 6536-0012**

**E-mail address:**  
***conocolubricants@conocophilips.com***

***www.lubes.conoco.com***

**600 N. Dairy Ashford • 2W9000 • Houston, TX 77079**



### **Outstanding Features**

- Zinc-free formulation
- Synthetic-like performance
- Suitable for year-round use
- Excellent wear protection for gears and hydraulic pumps
- Excellent oxidation resistance
- Excellent rust and corrosion protection
- Excellent water separation
- Good foam resistance
- Extended equipment life

### **Ecoterra™ Hydraulic Fluid HVI 46 Typical Properties**

<b>ISO Grade</b>	<b>46</b>
Specific Gravity @ 15.6°C (60°F)	0.863
Density, lbs/gal	7.20
Color, ASTM D1500	0.5
Flash Point (COC), °C (°F)	231 (448)
Pour Point, °C (°F)	-45 (-49)
Viscosity,	
cSt @ 40°C	45.2
cSt @ 100°C	7.54
SUS @ 100°F	231
SUS @ 210°F	52
Viscosity Index	133
Acid Number, ASTM D974, mg KOH/g	0.19
Copper Corrosion, ASTM D130	1a
Demulsibility, ASTM D1401, minutes to pass	10
Dielectric Strength, ASTM D877, kv*	35
Foam Test, ASTM D892	0-0
FZG Gear Test, ASTM D5182, Pass Stage	11
Oxidation Stability, RPVOT, ASTM D2272, minutes	684
Rust Test, ASTM D665 A&B	Pass

\*At the point of manufacture

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