



Ecoterra™ Hydraulic Fluid

Conoco Ecoterra™ Hydraulic Fluid is a reduced environmental impact, zinc-free antiwear hydraulic fluid specifically developed for use in industrial and mobile equipment operating in environmentally sensitive areas. It is nontoxic to fish and aquatic species as determined by the OECD 203 1-12 Test Method and is classified as inherently biodegradable by the OECD 301-B Test Method.

Ecoterra™ Hydraulic Fluid is available in three ISO viscosity grades: 32, 46 and 68. It is formulated with premium hydro-cracked base oils and fortified with an ashless, zinc-free antiwear additive package. It provides excellent wear protection, oxidation resistance, and rust and corrosion protection, and also has excellent water-separating properties.

Ecoterra™ Hydraulic Fluid is nontoxic and is recommended for use in place of conventional zinc-containing hydraulic fluids in applications where there is the possibility of soil or water contamination. It also may be used as a lower-cost alternative to synthetic, readily biodegradable hydraulic fluids.

Applications

- Hydraulic systems operating in environmentally sensitive areas such as ski resorts, wildlife refuges, national parks and lakes
- On-shore and off-shore oil drilling platforms
- Hydraulic equipment in amusement parks and zoos
- Electric motor bearings
- Hydraulic presses, shears, jacks and punches in machine shops
- Service station lifts
- Hydraulic systems requiring a zinc-free hydraulic fluid

Ecoterra™ Hydraulic Fluid meets the performance requirements of:

- Bosch Rexroth RE 90 220
- Cincinnati Lamb Specifications P-68 (ISO VG 32), P-70 (ISO VG 46) and P-69 (ISO VG 68)
- Denison HF-0, HF-1, HF-2
- DIN 51524 Part 2, Antiwear Hydraulic Oils, Type HLP
- General Motors LS-2
- German Steel Industry SEB 181222

**Nontoxic,
Inherently
Biodegradable
Antiwear Hydraulic
Fluid**

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- ISO 11158:1997 for Hydraulic Fluids, Family H
- U.S. Steel 126, 127, 136
- Vickers (Eaton) M-2950-S, I-286-S

Note: Ecoterra™ Hydraulic Fluid is compatible with zinc-containing hydraulic oils and will not cause any residue, gelling or filter plugging if mixed with such fluids. However, mixing will lessen the environmental advantages normally gained by using Ecoterra™ Hydraulic Fluid.

Outstanding Features

- Nontoxic
- Inherently biodegradable
- Excellent wear protection
- Excellent rust and corrosion protection
- Excellent storage stability
- Lower-cost alternative to synthetic biodegradable fluid

Due to continual product research and development, the information contained herein is subject to change without notification.

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Typical Properties

ISO Grade	32	46	68
Specific Gravity @ 15.6°C (60°F)	0.862	0.867	0.869
Density, lbs/gal	7.19	7.24	7.27
Color, ASTM D1500	0.5	1.0	1.0
Flash Point (COC), °C (°F)	227 (440)	232 (450)	241 (465)
Pour Point, °C (°F)	-34 (-29)	-40 (-40)	-37 (-35)
Viscosity,			
cSt @ 40°C	32.0	46.0	68.0
cSt @ 100°C	5.4	6.8	8.8
SUS @ 100oF	165	219	352
SUS @ 210oF	45	48	56
Viscosity Index	101	101	100
Acid Number, ASTM D974, mg KOH/g	0.22	0.22	0.22
Copper Corrosion, ASTM D130	1a	1a	1a
Dielectric Strength, ASTM D877, kv*	35	35	35
Four-Ball Wear, ASTM D4172,			
Scar Diameter, mm	0.62	0.54	0.44
FZG Gear Test, ASTM D5182, Pass Stage	12	12	12
Oxidative Stability,			
TOST, ASTM D943, hours	8,000	8,000	8,000
RPVOT, ASTM D2272, minutes	700	685	675
Rust Test, ASTM D665 A&B	Pass	Pass	Pass
Aquatic Toxicity, Rainbow Trout, OECD 203 1-12,			
1000 mg/l, 96 hours, LL50	Nontoxic	Nontoxic	Nontoxic
Biodegradability in 28 Days, OECD 301-B, %	22	22	22

*At the point of manufacture.

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