



## Hydroclear™ Ultra-Clean Multipurpose R&O Oil

Conoco Hydroclear™ Ultra-Clean Multipurpose R&O Oil is a premium quality, ashless, rust and oxidation-inhibited mineral oil developed for the lubrication of industrial equipment requiring an ultra-clean, general purpose circulating oil. It has the same high performance characteristics as our regular Multipurpose R&O Oil with the added advantage of fine filtration to a typical ISO Cleanliness Code of 17/15/11\* for use in circulating systems with tight tolerances where particle contamination can cause operational problems.

Hydroclear™ Ultra-Clean Multipurpose R&O Oil is formulated with premium hydrocracked base stocks and fortified with proprietary additive chemistry and an ashless, zinc-free antiwear additive. It provides excellent wear protection, as well as rust and corrosion protection and has exceptional oxidation resistance and thermal stability for extended service life.

Hydroclear™ Ultra-Clean Multipurpose R&O Oil ISO VG 46 is approved by ABB-Alstom under their HTGD 90117 specification for bearing lubrication in their geared turbines.

### **Applications**

- Direct-drive and geared steam turbines
- Circulating oil systems
- Hydraulic systems operating at pressures less than 2000 psi
- Older single-stage and some multi-stage reciprocating and rotary air compressors
- Centrifugal pumps and lightly loaded gearboxes
- Oil-filled flexible couplings

Hydroclear™ Ultra-Clean Multipurpose R&O oil meets the requirements of:

- ABB-Alstom HTGD 90117 for geared turbines
- Cincinnati Lamb Specifications P-38 (ISO VG 32), P-55 (ISO VG 46), and P-54 (ISO VG 68) for R&O Inhibited Hydraulic Oils
- Vickers (Eaton) I-286-S for Industrial Hydraulics

**Premium Rust  
And Oxidation-  
Inhibited  
Circulating Oil;  
Meets ISO  
Cleanliness Code  
17/15/11**

**U.S. Technical  
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1-800-255-9556**

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1-800-640-1956**

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### **Outstanding Features**

- Exceptional oxidation resistance and thermal stability for long service life
- Excellent wear protection
- Ashless (non-zinc) antiwear additive
- Excellent control of carbon deposits
- Rapid water separation and good hydrolytic stability
- Outstanding rust and corrosion protection
- Quick foam release

*\* Particle count cleanliness rating based on the ISO 4406:1999 standard, which replaces the ISO 4406:1987 standard that used two range numbers for cleanliness codes. Applies only to unopened packaged containers as delivered from ConocoPhillips manufacturing plants. Particle count may vary from lab to lab.*

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

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**Hydroclear™ Ultra-Clean Multipurpose R&O Oil**  
**Typical Properties**

<b>ISO Grade</b>	<b>32</b>	<b>46</b>	<b>68</b>	<b>100</b>
<b>AGMA Grade</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
Specific Gravity @ 15.6°C (60°F)	0.861	0.866	0.867	0.872
Density, lbs/gal	7.18	7.22	7.25	7.27
Color, ASTM D1500	0.5	0.5	0.5	0.5
Flash Point (COC),				
°C	227	229	238	254
°F	440	445	460	490
Pour Point,				
°C	-40	-34	-34	-34
°F	-40	-30	-30	-30
Viscosity,				
cSt @ 40°C	31.0	45.0	68.0	99.0
cSt @ 100°C	5.4	6.7	8.8	11.2
SUS @ 100°F	160	232	352	516
SUS @ 210°F	44	49	56	65
Viscosity Index	108	100	100	100
Copper Corrosion, ASTM D130	1a	1a	1a	1a
Demulsibility, ASTM D1401, minutes to pass	10	10	10	10
Dielectric Strength, ASTM D977, kv *	30	30	30	30
Four-Ball Wear, ASTM D4172,				
Scar Diameter, mm	0.4	0.4	0.4	0.4
FZG Gear Test, ASTM D5182, Pass Stage	9	9	9	9
Oxidation Stability,				
TOST, ASTM D943, hours	4,000	4,000	4,000	4,000
RPVOT, ASTM D2272, minutes	750	750	750	750
Rust Test, ASTM D665 A&B	Pass	Pass	Pass	Pass
Cleanliness Code, ISO 4406:1999*	17/15/11	17/15/11	17/15/11	17/15/11

\*At the point of manufacture.

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