



## Hydroclear Diamond Class® AW Turbine Oil

Conoco Hydroclear Diamond Class® AW Turbine Oil is a premium quality antiwear, rust and oxidation-inhibited (R&O) turbine oil developed to meet the demands of severe-service geared gas and steam turbines. It is available in two viscosity grades: ISO 32 and 46.

Hydroclear Diamond Class® AW Turbine Oil is formulated with premium quality hydrocracked paraffinic base oils and fortified with ashless additives to provide superior wear protection and oxidation resistance. It is inhibited to minimize the formation of harmful sludge and varnish deposits due to oxidation at high temperatures, resulting in long service life.

Hydroclear Diamond Class® AW Turbine Oil protects critical system components against rust and corrosion. It has excellent water-separating characteristics to minimize the formation of emulsions and bacteria buildup. A foam inhibitor prevents excessive foaming that can interfere with proper lubrication. It is filtered to an ISO Cleanliness Code of 18/16/13\* for use in circulating systems with tight tolerances where particle contamination can cause operational problems.

### **Applications**

- Geared and direct-drive combined-cycle gas turbines
- Geared and direct-drive gas and steam turbines

Hydroclear Diamond Class® AW Turbine Oil meets the performance requirements of:

- ABB G12106
- Alstom HTGD 90117 for geared turbines
- ASTM D4304 Type I Turbine Oil
- British Standard 489-1999
- Cincinnati Lamb Specifications P-38 (ISO VG 32) and P-55 (ISO VG 46) for R&O Inhibited Hydraulic Oils
- DIN 51517 Part 1, Lubricating Oils, Type CL
- DIN 51524 Part 1, R&O Hydraulic Oils, Type HL
- DIN 51524 Part 2, Antiwear Hydraulic Oils, Type HLP
- General Electric GEK-107395a, GEK-32568f, GEK-46506d and obsolete GEK-27070, GEK-28143a
- Ingersoll-Rand Centak centrifugal compressors

**Premium  
Antiwear, Rust  
And Oxidation-  
Inhibited Turbine  
Oil; Meets ISO  
Cleanliness Code  
18/16/13**

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

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1-800-640-1956**

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- Military Specification MIL-L-17672D
- Siemens Westinghouse TLV 9013 04 and obsolete 21T0591 and 55125Z3
- Solar ES9-224 Class II Turbine Oil
- Toshiba
- U.S. Steel 126, R&O Inhibited Hydraulic Oil

\* 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. Can be filtered to an ISO Cleanliness Code of 17/15/11 at certain terminals upon request, for an extra charge. Particle count may vary from lab to lab.

### **Outstanding Features**

- Extended service life
- Excellent oxidative and thermal stability
- Excellent wear protection for the gears
- Excellent rust and corrosion protection
- Excellent water-separating characteristics
- Resists the formation of emulsions and bacteria buildup
- Good foam resistance
- Meets ISO Cleanliness Code 18/16/13
- Compatible with electrostatic oil cleaners

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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 Diamond Class® AW Turbine Oil**  
**Typical Properties**

<b>ISO Grade</b>	<b>32</b>	<b>46</b>
Specific Gravity @ 15.6°C (60°F)	0.858	0.869
Density, lbs/gal	7.14	7.23
Color, ASTM 1500	0.5	0.5
Flash Point (COC), °C (°F)	227 (440)	229 (444)
Pour Point, °C (°F)	-40 (-40)	-40 (-40)
Viscosity,		
cSt @ 40°C	32.0	46.4
cSt @ 100°C	5.5	7.0
SUS @ 100°F	162	236
SUS @ 210°F	44	49
Viscosity Index	101	99
Acid Number, ASTM D974, mg KOH/g	0.08	0.08
Copper Corrosion, ASTM D130	1a	1a
Demulsibility, ASTM D1401, minutes to pass	10	10
Foam Test, ASTM D892	0-0	0-0
Four-Ball Wear, ASTM D4172, Scar Diameter, mm	0.60	0.60
FZG Gear Test, ASTM D5182, Pass Stage	9	9
Oxidation Stability,		
TOST, ASTM D943, hours	16,500	16,500
RPVOT, ASTM D2272, minutes	1,600	1,600
Rust Test, ASTM D665 A&B	Pass	Pass
Cleanliness Code, ISO 4406:1999 *	18/16/13	18/16/13

\* At the point of manufacture.

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