



Diamond Class™ AW Turbine Oil

Diamond Class AW Turbine Oil is a premium quality, rust and oxidation (R&O)-inhibited, antiwear turbine oil developed for use in geared and direct-drive gas turbines and steam turbines in severe service.

Diamond Class AW Turbine Oil is formulated with premium hydrocracked base oils and select additives to provide outstanding oxidation resistance, excellent wear protection, protection against rust and corrosion, and resistance to foaming. It has outstanding oxidation resistance and thermal stability at high temperatures to minimize deposit formation and provide long service life. It protects system components against rust and corrosion. It has excellent water-separating properties to minimize the formation of emulsions and is resistant to excessive foam buildup that can interfere with proper lubrication. An ashless (non-zinc) antiwear additive provides wear protection for gears and bearings.

Diamond Class AW Turbine Oil 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

- Combined-cycle and co-generation gas turbines
- Gas turbines and steam turbines with gear drives

Diamond Class AW Turbine Oil meets the requirements of the following industry and OEM specifications:

- ABB G12106
- Alstom Power HTGD 90 117 for geared turbines
- ASTM D4304 Type I Turbine Oil
- British Standard 489
- DIN 51517 Part 1, Lubricating Oils, Type CL
- DIN 51524 Part 1, Hydraulic Oils, Type HL
- DIN 51524 Part 2, Antiwear Hydraulic Oils, Type HLP
- General Electric GEK 101941A, GEK 107395A, GEK 32568F, GEK 46506e, GEK 27070 (obsolete), GEK 28143A (obsolete)
- Siemens Power Generation TLV 9013 04
- Siemens Westinghouse 21T0591 (obsolete), 55125Z3 (obsolete)
- Solar Turbines ES9-224 Class II Turbine Oil
- U.S. Military MIL-L-17672D

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

Contact Information

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- U.S. Steel 126

Features/Benefits

- Outstanding oxidation resistance and thermal stability for long service life
- Protects against sludge and varnish formation
- Excellent wear protection for gears and bearings
- Protects against rust and corrosion
- Excellent water-separating properties
- Resists the formation of emulsions and bacteria buildup
- Good foam resistance
- Meets ISO Cleanliness Code rating of 18/16/13⁽¹⁾
- Compatible with electrostatic oil cleaners⁽²⁾

⁽¹⁾ **Note:** As manufactured. Particle counts may vary from lab to lab. Upon request, this product can be filtered to an ISO Cleanliness Code of 17/15/11 at certain terminals, for an additional cost.

⁽²⁾ **Caution:** When used in turbines equipped with electrostatic oil cleaners, please consult with the respective manufacturers for proper filter selection.

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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Typical Properties

ISO Grade	32	46	68
Specific Gravity @ 60°F	0.862	0.866	0.871
Density, lbs/gal @ 60°F	7.19	7.22	7.26
Color, ASTM D1500	0.5	0.5	0.5
Flash Point (COC), °C (°F)	227 (440)	231 (448)	243 (469)
Pour Point, °C (°F)	-40 (-40)	-36 (-33)	-30 (-22)
Viscosity,			
cSt @ 40°C	32.0	46.0	68.0
cSt @ 100°C	5.4	6.8	8.8
SUS @ 100°F	165	237	352
SUS @ 210°F	44.4	49.0	55.9
Viscosity Index	103	102	102
Acid Number, ASTM D974, mg KOH/g	0.14	0.14	0.10
Copper Corrosion, ASTM D130	1a	1a	1a
Demulsibility, ASTM D1401, minutes to pass	10	10	10
Foam Test, ASTM D892	0-0-0	0-0-0	0-0-0
Four-Ball Wear, ASTM D4172, Scar Diameter, mm	0.50	0.50	0.50
FZG Scuffing Test, ASTM D5182, Failure Load Stage	10	10	10
Oxidation Stability,			
TOST, ASTM D943-04a (modified), hours	>24,000	>24,000	>24,000
RPVOT, ASTM D2272, minutes	>1,700	>1,700	>1,700
Rust Test, ASTM D665 A&B	Pass	Pass	Pass
Cleanliness Code, ISO 4406:1999	18/16/13	18/16/13	18/16/13

Health and Safety Information

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via <http://w3.conocophillips.com/NetMSDS>.

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