Diamond Class® Turbine Oil

Diamond Class Turbine Oil is a premium quality, rust and oxidation (R&O)-inhibited turbine oil developed for use in gas turbines and steam turbines in severe service. It is specially formulated to protect against sludge and varnish formation in new-generation gas turbines.

Diamond Class Turbine Oil is formulated with premium hydrocracked base oils and specially tailored additives to provide outstanding oxidation resistance and deposit control, resulting in long service life and significant cost savings to power generation customers. It minimizes the formation of harmful sludge and varnish deposits, especially in servo valves and IGV valves where oil flow rate is low and the oil is subjected to cyclic temperatures common in peaking gas turbines. It protects system components against rust and corrosion. It has excellent water-separating properties to minimize the formation of emulsions and bacteria buildup, and is resistant to excessive foam buildup that can interfere with proper lubrication and lead to premature bearing wear.

Diamond Class 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

- Direct-drive, combined-cycle and co-generation gas turbines(1)
- Direct-drive steam turbines(1)

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

- ABB G12106
- Alstom Power HTGD 90 117, for turbines without gear drives
- ASTM D4304-06a, Type I Turbine Oil
- ASTM D4304-06a, Type III Turbine Oil
- British Standard 489
- Cincinnati Machine P-38 (ISO VG 32) (approved)
- DIN 51515 Part 1, Lubricating Oils, Type L-TD
- DIN 51515 Part 2, Lubricating Oils, Type L-TG
- DIN 51517 Part 1, Lubricating Oils, Type CL
- DIN 51524 Part 1, Hydraulic Oils, Type HL
- General Electric GEK 101941A, GEK 107395A, GEK 32568F, GEK 46506e, GEK 27070 (obsolete), GEK 28143A (obsolete)
- ISO 8068, Type L-TGB, Type L-TGSB

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

Contact Information

U.S. Customer Service:
1-800-822-6457

Technical Hot Line:
1-800-766-0050

International Customer Service:
+1-832-486-3363
+1-832-486-3870

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- Siemens Power Generation TLV 9013 04
- Siemens Westinghouse 21T0591 (obsolete), 55125Z3 (obsolete)
- U.S. Military MIL-L-17672D
- U.S. Steel 126

[1] ***Note:*** *For turbines with gear drives, use Diamond Class™ AW Turbine Oil.*

Features/Benefits

- Outstanding oxidation resistance and thermal stability for long service life
- Outstanding control of sludge and varnish formation in base-loaded and peaking turbines
- 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[2]

[2] ***Note:*** *As manufactured. Particle counts may vary from lab to lab.*

Diamond Class® Turbine Oil

Typical Properties

ISO Grade	32	46	68
Specific Gravity @ 60°F	0.861	0.866	0.871
Density, lbs/gal @ 60°F	7.17	7.21	7.25
Color, ASTM D1500	0.5	0.5	0.5
Flash Point (COC), °C (°F)	227 (440)	229 (444)	243 (469)
Pour Point, °C (°F)	-40 (-40)	-36 (-33)	-30 (-22)
Viscosity,			
cSt @ 40°C	31.7	46.0	68.0
cSt @ 100°C	5.4	6.8	8.8
SUS @ 100°F	163	237	352
SUS @ 210°F	44.4	49.0	55.9
Viscosity Index	103	102	102
Acid Number, ASTM D974, mg KOH/g	0.10	0.10	0.10
Copper Corrosion, ASTM D130	1a	1a	1a
Demulsibility, ASTM D1401, minutes to pass	20	20	20
Foam Test, ASTM D892	Pass	Pass	Pass
Oxidation Stability,			
TOST, ASTM D943-04a, hours	>35,000	>35,000	>35,000
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*.

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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