# Mobil DTE™ 800 Series

Mobil Industrial , Denmark

Superior Performance Turbine Oils

## Product Description

Mobil DTE™ 832 and 846 are superior performance turbine oils designed for use in steam turbines, gas turbines and combined cycle gas turbine (CCGT) applications under the most severe operating conditions. These progressive products are based on high quality hydrotreated basestocks for exceptional thermal/oxidation resistance along with specially chosen additives engineered to provide the deposit control and "keep-clean" performance required by severe duty gas turbines as well as excellent water separability needed for steam turbine operation. The formulations also include a non-zinc antiwear system to meet the load carrying requirements of geared turbines.

In addition to meeting the separate requirements of modern steam and gas turbine designs, Mobil DTE 800 Series are excellent choices for combined cycle applications that require a single oil for a gas turbine and a steam turbine run in tandem. Simultaneously meeting both deposit control and water separation requirements is the key performance highlight of this advanced lubricant technology. The excellent thermal/oxidative resistance of Mobil DTE 832 and 846 ensures that they can be operated in the most severe turbine environments.

The performance features of Mobil DTE 800 Series oils translate into excellent equipment protection, reliable operation, with reduced down-time and extended oil charge life. These products also provide the ultimate flexibility to the operator because they can be used in all turbine types: steam, gas and geared-turbines.

## Features and Benefits

Mobil DTE brand mineral-based products have been the choice for turbine operators worldwide for more than one hundred years. During that period our company's scientists have maintained the strongest ties with turbine equipment builders and operators to ensure that the needs of new turbine designs are met or exceeded by our lubricants. This has required a continual upgrading of Mobil turbine oils and the application of the most appropriate modern base oil and additive technology.

For modern stationary gas turbines that operate at high power outputs, exceptional protection against thermal/oxidative degradation and deposit control are key requirements. Severe operation causes thermal stressing of the lubricant that can result in filter plugging, servo valve deposits or short oil life. For modern steam turbines, a high level of oxidation resistance is required as well as good water separability in cases of steam leaks. For combined cycle operation, it is necessary for the lubricant to meet the needs of both turbine types.

DTE 800 Series oils offer the following features and potential benefits:

| Features | Advantages and Potential Benefits |
|---|---|
| Meets or exceeds both gas turbine and steam turbine requirements of key builders | Avoids lube misapplication and costly change-out<br>Reduces inventory costs |
| Excellent thermal/oxidation stability | Reduced downtime, more reliable operation<br>Extended oil charge life; lower product costs |
| Excellent antiwear protection | Excellent protection for geared turbines (gas- and steam-), lower maintenance and replacement costs<br>Extended equipment protection and reduced replacement costs |
| Excellent demulsibility | Efficient system operation and reduced maintenance |

## Applications

Mobil DTE 832 and 846 are superior performance turbine oils designed for use in steam and gas turbine oil systems, direct- or gear-coupled and turbine speed control mechanisms. Specific applications include:

▪Combined cycle (CCGT) electric power generation applications including those with a common circulation system for the steam turbine and gas turbine.

▪Lubrication of steam turbine or gas turbine units used for electric power generation, natural gas pipeline transmission, process operations and cogeneration plants.

## Specifications and Approvals

| This product has the following approvals: | 832 | 846 |
|---|---|---|
| GE Power (former Alstom Power) HTGD 90117 | X | X |
| Siemens TLV 9013 04 | X | X |
| Siemens TLV 9013 05 | X | X |

| This product is recommended for use in applications requiring: | 832 | 846 |
|---|---|---|
| GE Power GEK 28143B | X | X |

| This product meets or exceeds the requirements of: | 832 | 846 |
|---|---|---|
| DIN 51515-1:2010-02 | X | X |
| DIN 51515-2:2010-02 | X | X |
| GE Power GEK 101941A | X | |
| GE Power GEK 107395A | X | |
| GE Power GEK 121608 | X | |
| GE Power GEK 28143A | X | X |
| GE Power GEK 32568Q | X | |
| GE Power GEK 46506D | X | |
| JIS K-2213 Type 2 | X | X |
| Siemens Industrial Turbo Machinery MAT 812101 | X | |
| Siemens Industrial Turbo Machinery MAT 812102 | | X |
| Siemens Industrial Turbo Machinery MAT 812106 | X | |
| Siemens Industrial Turbo Machinery MAT 812107 | | X |
| Siemens Industrial Turbo Machinery MAT 812108 | X | |
| Siemens Industrial Turbo Machinery MAT 812109 | | X |

| This product meets or exceeds the requirements of: | 832 | 846 |
|---|---|---|
| Siemens Westinghouse PD-55125Z3 | X | |
| Solar Turbines ES 9-224, Class II | X | X |

## Properties and Specifications

| Property | 832 | 846 |
|---|---|---|
| Grade | ISO VG 32 | ISO VG 46 |
| Air Release Time, 50 C, min, ASTM D3427 | 4 | 4 |
| Copper Strip Corrosion, 3 h, 100 C, Rating, ASTM D130 | 1A | 1A |
| Emulsion, Time to 0 mL Emulsion, 54 C, min, ASTM D1401 | 15 | 15 |
| FZG Scuffing, Fail Load Stage, A/8.3/90, ISO 14635-1 | 8 | 8 |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 224 | 244 |
| Foam, Sequence I, Stability, ml, ASTM D892 | 0 | 0 |
| Foam, Sequence I, Tendency, ml, ASTM D892 | 20 | 20 |
| Foam, Sequence II, Stability, ml, ASTM D892 | 0 | 0 |
| Foam, Sequence II, Tendency, ml, ASTM D892 | 20 | 20 |
| Foam, Sequence III, Stability, ml, ASTM D892 | 0 | 0 |
| Foam, Sequence III, Tendency, ml, ASTM D892 | 20 | 20 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 5.4 | 6.2 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 29.6 | 42.4 |
| Pour Point, °C, ASTM D97 | -30 | -30 |
| Rotating Pressure Vessel Oxidation Test, min, ASTM D2272 | 1200 | 1100 |
| Rust Characteristics, Procedure A, ASTM D665 | PASS | PASS |
| Rust Characteristics, Procedure B, ASTM D665 | PASS | PASS |
| Specific Gravity, 15.6 C/15.6 C, ASTM D1298 | | 0.87 |
| Specific Gravity, 15.6 C/15.6 C, ASTM D4052 | 0.86 | |
| Turbine Oil Stability Test, Life to 2.0 mg KOH/g, h, ASTM D943 | 10,000+ | 10,000+ |
| Viscosity Index, ASTM D2270 | 110 | 106 |

## Health and Safety

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @ http://www.msds.exxonmobil.com/psims/psims.aspx

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Typical Properties are typical of those obtained with normal production tolerance and do not constitute a specification. Variations that do not affect product performance are to be expected during normal manufacture and at different blending locations. The information contained herein is subject to change without notice. All products may not be available locally. For more information, contact your local ExxonMobil contact or visit www.exxonmobil.com
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