

# FBK TURBINE EX 32

## Long-Life Turbine Oil

**FBK Turbine EX 32** is the long-life turbine oil for gas and steam turbines. Gas turbines operate under more severe temperature conditions compared to steam turbines, so they require heat-resistant turbine oils that have excellent oxidation stability even at high temperatures. **FBK Turbine EX 32** is the long-life turbine oil with high thermal stability, excellent rust prevention, outstanding antifoaming property and good moisture separation property, which meets MS04-MA-CL003 turbine oil specification by Mitsubishi Hitachi Power Systems, Ltd.(MHPS).

### ● Special Features

#### 1. Excellent Thermal and Oxidation Stability

Unlike many other lubricants, turbine oil is used for more than 10 years while part of it is being changed (forcibly supplemented) during maintenance. On the other hand, turbine oil gradually deteriorates to generate sludge and may harm the operation of the machine. Therefore, turbine oil with excellent oxidation stability and less sludge formation is required.

**FBK Turbine EX 32** exhibits excellent high temperature oxidation stability and thermal stability by blending highly refined hydrocracking base oil and amine antioxidant with less sludge formation. Therefore, long-term use under harsh conditions becomes possible.

#### 2. Excellent Rust Prevention

**FBK Turbine EX 32** is blended with powerful rust preventive agents that provide excellent rust prevention performance. As a result, it keeps rust from forming inside the lubricating system even during long periods of continuous use.

#### 3. Outstanding Antifoaming Properties

Foaming may occur in lubricating oil or hydraulic fluid for several reasons. Oil and air may be mixed together violently; air may be drawn into the system through poor seals in the pipes; or air and other gases dissolved in the oil may suddenly separate, forming bubbles. Of course, the best solution to foaming problems is to identify the causes and eliminate them, but it is also desirable that the oil be able to quickly eliminate any foam that does appear.

Antifoaming agents are added to **FBK Turbine EX 32**, thus ensuring excellent defoaming performance during actual use.

#### 4. Very Good Emulsion Resistance and Moisture Separation Properties

If water is present in a lubricating oil or hydraulic fluid, it can emulsify with the oil and cause unstable operation. Oils should thus be resistant to emulsification and have good water separation properties.

Thanks to the excellent water separation properties of **FBK Turbine EX 32**, this oil prevents emulsification problems if water becomes mixed with the oil.

#### 5. Excellent Viscosity-Temperature and Low-Temperature Characteristics

**FBK Turbine EX 32** has a small change in viscosity with temperature and low pour point, it is also suitable for use in the winter and cold area.

### ● Approval-Applicable Standard

#### Approval

- MHPS
- MS04-MA-CL002,
- MS04-MA-CL005(Ver.2)

#### Standard

- General Electric GEK32568J, GEK107395A
- ISO 8068 L-TSA, L-TGA, L-TGB, L-TGSB
- JIS K2213 (Turbine oil, Type2)
- ASTM D4304 Type I, Type III
- DIN 51515-1, 51515-2

### ● Packaging

200-liter drum

### ● Important Note

This oil might acquire a reddish color during storage. This color change is caused by the

oxidation inhibitors. It has no effect on the anti-oxidation performance, and the colored oil can be used as usual.

### ● Typical Properties of FBK Turbine EX 32

Color (ASTM)	L0.5
Density (15°C), g/cm <sup>3</sup>	0.843
Kinematic viscosity(40°C), mm <sup>2</sup> /s	32.0
Kinematic viscosity (100°C), mm <sup>2</sup> /s	5.9
Viscosity index	130
Flash point (COC), °C	240
Pour point, °C	-17.5
Acid number, mgKOH/g	0.06
Copper strip corrosion (100°C, 3 h)	1
Rust prevention (artificial seawater, 60°C ,24 h)	No rust
RPVOT(ASTM D 2272,150°C), min	2,240

Note: The typical properties may be changed without notice. (November 2016)



## Handling Precautions

▼ Follow these precautions when handling this product.

<b>Composition :</b>	Base Oil, Additives
<b>Precautionary pictograms:</b>	Not applicable
<b>Signal word:</b>	Not applicable
<b>Hazard Statement:</b>	Not applicable
<b>Precautionary Statements:</b>	<ul style="list-style-type: none"> <li>• Do not handle until all safety precautions have been read and understood.</li> <li>• Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>• Do not allow the eyes to become exposed to the product. Do not swallow the product.</li> <li>• Wash hands thoroughly after handling.</li> <li>• Do not eat, drink or smoke when using this product.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>• IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.</li> <li>• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>• If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.</li> <li>• IF ON SKIN: Wash with plenty of soap and water.</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.</li> <li>• Containers that have been opened must be tightly sealed.</li> </ul>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>• Dispose of contents/container in accordance with local/regional/national/international regulations.</li> <li>• If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.</li> </ul>