

# FBK TURBINE GT-32

## Long-Life Gas Turbine Oil

Compared with steam turbines, gas turbines operate under more severe temperature conditions, so they require heat-resistant turbine oils that have excellent oxidation stability even at high temperatures. FBK Turbine GT-32 is the first amine-type long-life gas turbine oil in Japan to meet General Electric's GEK-32568 turbine oil specifications.

### ● Special Features

#### 1. Excellent Thermal Stability

Compared with steam turbines, gas turbines are exposed to much higher thermal loads. The combustion temperatures in gas turbines are typically between 1,000 and 1,300°C, and they can reach as high as 1,500°C in high-efficiency units for the latest combined-cycle generating systems. The surface temperatures of bearings in gas turbines are also higher than in steam turbines, and the radiant heat can cause the oil temperature in the bearings to reach 100 to 120°C. As a result, thermal resistance is a particularly important feature of gas turbine oils, so amine oxidation inhibitors with excellent thermal resistance are widely used. FBK Turbine GT-32 is blended with amine oxidation inhibitors specially developed by the Nippon Oil Corporation, giving this gas turbine oil outstanding sludge resistance.

#### 2. Outstanding Oxidation Stability

Unlike most other lubricants, turbine oils are used for as long as 10 years, with make-up oil being added periodically during regular maintenance. Gradual degradation of the turbine oil can cause sludge to form, thus interfering with machinery operation.

FBK Turbine GT-32 is made with highly refined hydrocracked base oil that provides outstanding oxidation stability even under severe conditions for long periods of time. As a result, this oil was adopted early on by electric power companies for many of their combined cycle and gas turbine power stations, where it has demonstrated its outstanding performance.

#### 3. Excellent Rust Prevention

If water enters a lubrication system, it not only can interfere directly with machine operation; it may also cause rust to form inside the system, thus keeping the machinery from operating smoothly. Therefore it is essential that all water be removed from the oil.

FBK Turbine GT-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.

#### 4. 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 GT-32, thus ensuring excellent defoaming performance during actual use.

#### 5. 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 GT-32, this oil prevents emulsification problems if water becomes

mixed with the oil.

6. **Excellent Viscosity-Temperature and Low-Temperature Characteristics**

FBK Turbine GT-32 undergoes little change due to temperature changes and it has a low pour point, so it also provides excellent performance as a hydraulic fluid.

● **Applications**

Thanks to its outstanding performance, FBK Turbine GT-32 can be used for the lubrication of a wide range of industrial machinery, including:

- (1) Gas turbines, including advanced gas turbines used in combined cycle systems
- (2) All types of electrical generators and motors
- (3) Air blowers, pumps, and mid-sized and small compressors
- (4) Low-load gear transmissions, machine tools, and all other types of industrial machinery
- (5) All types of hydraulic devices

● **Packaging**

200-liter drums and 20-liter cans

● **Typical Properties of FBK Turbine GT-32**

	FBK Turbine GT-32	GEK-325 68E
Kinematic viscosity		
(40°C), mm <sup>2</sup> /s	31.9	32 ± 10%
(100°C), mm <sup>2</sup> /s	5.9	—
Viscosity index	131	95 min.
Flash point (COC), °C	230	215 min.
TAN, mgKOH/g	0.10	0.20 max.
Pour point, °C	-17.5	-12 max.
Copper strip corrosion (100°C, 3 h)	1	—
Rust prevention (artificial seawater, 24 h)	Passed	Passed
RBOT, min	1,900	500 min.
Corrected RBOT, %	97	80 min.
TOST, h	10,000 min.	3,000 min.

Note: The typical properties may be changed without notice.  
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● **Important Note**

This oil might acquire a reddish color during storage. This color change is caused by the amine-type oxidation inhibitors. It has no effect on the antioxidation performance, and the colored oil can be used as usual.



## Handling Precautions

▼ **Follow the following precautions when handling this product.**

- Read this product's Material Safety Data Sheet before using the product.
- Obey all applicable laws and regulations concerning the handling and disposal of this product, particularly laws and regulations related to fire safety, the treatment and disposal of waste and sewage, the prevention of water and ocean pollution, and workplace safety and hygiene.  
Please request the Material Safety Data Sheet where you purchased this product.

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