ExxonMobil

# Mobil Jet™ Oil 254

ExxonMobil Aviation , Philippines

Aircraft Type Gas Turbine Lubricant

## Product Description

Mobil Jet Oil 254 is a third-generation, extra high performance, synthetic aircraft-type gas turbine lubricant engineered to meet the performance requirements for gas turbine engines used in commercial and military aircraft. This product is formulated from a specially prepared, hindered-ester base stock and fortified with a unique chemical additive package. The result is a product having superior thermal and oxidation stability that resists deterioration and deposit formation while maintaining the physical characteristics required by builder and military specifications. The physical properties of Mobil Jet Oil 254 are similar to those currently available, earlier-generation gas turbine lubricants. The effective operating range of the lubricant is between -40°C (-40 °F) and 232°C (450°F).

## Features and Benefits

Mobil Jet Oil 254 is formulated to meet the demanding requirements of latest technology aircraft-type gas turbines operating over a wide range of severe operating conditions. When compared to a typical Type II lubricant, Mobil Jet Oil 254 reduces bulk oil oxidation by up to 50 percent and shows deposit control capability 50 F higher. These properties have been confirmed in various laboratory tests including; the Corrosion-Oxidation Stability Test, Alcor Deposition Test, Vapor Phase Coker, Erdco High-Temperature Bearing Test, Ryder Gear and the Mobil Thin Film Oxidation Test.The closely controlled low-temperature viscosity of Mobil Jet Oil 254, along with its low pour point (below -54 °C), ensure good low-temperature fluidity to permit starting and lubrication at temperatures as low as -40 °C. In extensive laboratory testing and in-flight experience, Mobil Jet Oil 254 also exhibits excellent bulk oil stability at temperatures up to 232 °C (450 °F) for extended periods. The evaporation rate at these temperatures is low enough to prevent excessive loss of volume. The load-carrying ability of Mobil Jet Oil 254 comes from its synthetic base stock viscosity and, therefore, is not subject to loss from viscosity index additive shear. The lubricant has excellent resistance to foaming.Key features and benefits include:

| Features | Advantages and Potential Benefits |
|---|---|
| Excellent thermal and oxidation stability | Reduces the formation of carbon and sludge deposits<br>Maintains engine efficiency and extends engine life<br>Reduces bulk oil oxidation by 50% and increases deposit control by 50 °F |
| Excellent wear and corrosion protection | Extends seal, gear and bearing life<br>Reduces engine maintenance |
| Viscosity and shear stability across wide temperature range | Provides effective lubrication at high operating temperatures |
| Chemically stable at high operating temperatures | Reduces evaporation losses and lowers oil consumption |
| Excellent resistance to foaming | Maintains film strength under rigorous operating conditions |
| Good low temperature fluidity | Permits start-up and ensures effective lubrication of critical components at temperatures as low as -40 °F |

## Applications

Mobil Jet Oil 254 is recommended for aircraft gas turbine engines of the turbo-jet, turbo-fan, turbo-prop, and turbo-shaft (helicopter) types used in commercial and military service. It is also suitable for aircraft-type gas turbine engines used in industrial or marine applications.Mobil Jet Oil 254 is approved against the High Thermal Stability (HTS) classification of U.S. Military Specification MIL-PRF-23699. It is also compatible with other synthetic gas turbine lubricants meeting MIL-PRF-23699. However, mixing with other products is not recommended because the blend would result in some loss of the superior performance characteristics of Mobil Jet Oil 254.Mobil Jet Oil 254 is completely compatible with all metals used in gas turbine construction, as well as with F Rubber (Viton A), H Rubber (Buna N), and other commonly used seal materials.

Mobil Jet Oil 254 has the following builder approvals *

Engines

- Honeywell/Lycoming-Turbines
- Rolls-Royce/Allison Engine Company
- CFM International
- General Electric Company
- International Aero Engines
- Pratt and Whitney Group
- Pratt and Whitney, Canada
- Rolls-Royce Limited
- SNECMA
- Honeywell/Garrett Turbine Engine Company

Accessories

- Honeywell-Auxiliary power units and air cycle machines
- Hamilton Standard-Starters
- Hamilton Sundstrand Corp.-APUs, constant-speed drives and integrated-drive generators

* Specific engine or equipment approval must be verified with the builder

## Specifications and Approvals

| This product has the following approvals: |
|---|
| MIL-PRF-23699-HTS |

## Properties and Specifications

| Property | |
|---|---|
| Autogenous-ignition temperature test, deg.C, 30 CFR 35.20 | 399 |
| Change in Kinematic Viscosity, 72 h @ -40 C, %, ASTM D2532 | -2.2 |
| Elastomer Compatibility, AMS-3217/4 (72hrs @204C), % swell, FTMS 791-3604 | 20.8 |
| Elastomer Compatibility,AMS-3217/1(72hr @70C), % swell, FTMS 791-3604 | 20 |
| Evaporation Loss, 6.5 h, 204 C, mass%, ASTM D972(mod) | 7.4 |
| Evaporation Loss, 6.5 hr @ 232 C, 5.5" Hg, mass %, ASTM D972(mod) | 25.2 |
| Fire Point, °C, ASTM D92 | 288 |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 254 |
| Foam, Sequence I, Tendency, ml, ASTM D892 | 0 |
| Foam, Sequence II, Tendency, ml, ASTM D892 | 10 |

| Property | |
|---|---|
| Foam, Sequence III, Tendency, ml, ASTM D892 | 0 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 5.3 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 26.4 |
| Kinematic Viscosity @ -40 C, mm2/s, ASTM D445 | 11500 |
| Pour Point, °C, ASTM D5950 | -62 |
| Shear Stability, %KV loss, ASTM D2603 | 0.7 |
| Specific Gravity 60 F / 60 F, ASTM D1429 | 1.0044 |
| Total Acid Number, mgKOH/g, ARP 5088 | 0.08 |
| Ryder Gear Load Carrying, % vs ref., FTMS 791-6508 | 114 |

## 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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04-2024
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Due to continual product research and development, the information contained herein is subject to change without notification. Typical Properties may vary slightly.

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