Product Data Sheet

Mobil Jet Oil 254

Synthetic Aircraft-Type Gas Turbine Lubricant

Product Description

Mobil Jet Oil 254 is a third-generation synthetic lubricant made from a specially prepared hindered-ester base stock fortified with a special 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. Because of this, the physical properties of Mobil Jet Oil 254 are similar to currently available, earlier-generation turbine lubricants.

The closely controlled viscosity at -40° C (-40° F), along with a pour point below -54° C (-65° F), ensure good low-temperature fluidity to permit starting and lubrication at -40° C. In extensive laboratory testing and in-flight experience, Mobil Jet Oil 254 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.

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 Fahrenheit degrees higher. These properties have been confirmed in various laboratory tests, including the Corrosion-Oxidation Stability Test, Alcor Deposit Test, Erdco High-Temperature Bearing Test, and the Thin Film Oxidation Test. Mobil Jet Oil 254 is compatible with other synthetic gas turbine lubricants meeting MIL-L-23699E. Mixing with other products, however, could result in some loss of the superior performance features of Mobil Jet Oil 254.

The lubricant is completely compatible with all metals used in gas turbine construction, as well as with F Rubber (Viton® A), H Rubber (Buna N), and silicone seal materials. Do not spill the lubricant on insulation, plastic, rubber, or paint.

Mobil Jet Oil 254 may be stored for 15 years in sealed quart metal cans and up to two years in drums. If held longer, check it for suitability before placing it in service. Your Mobil representative will provide the necessary information for conducting inspection tests.

Application

Mobil Jet Oil 254 is recommended for aircraft gas turbine engines of the turbo-jet, turbo-fan, turbo-prop, and turbo-shaft (helicopter) types in commercial and military service. It also is suitable for aircraft-type gas turbine engines in industrial or marine service.

Mobil Jet Oil 254 is approved against U.S. Military Specification MIL-L-23699E, as well as by the following engine and accessory manufacturers:

Engine Approvals

- Textron-Lycoming
- Allison Engine Co.
- General Electric Company
- International Aero Engines
- Pratt & Whitney Group, United Technologies Corp.
- Pratt & Whitney, Canada
- Rolls-Royce Limited
- SNECMA
- Sundstrand
- Garrett Turbine Engine Co. (Allied-Signal Aerospace Co.)

Accessory Approvals

- AiResearch - Auxiliary power units and air cycle machines
- Hamilton Standard Division, United Technologies Corp. - Starters
- Sundstrand Corp. - Constant-speed drives and integrated-drive generators
- Westinghouse Aerospace Electrical Division - Generators

Advantages

Mobil Jet Oil 254 offers the following advantages and benefits:

- Reduces bulk oil oxidation by 50 percent
- Deposit control increased by 50 Fahrenheit degrees
- Reduces sludge and carbon deposit formation
- Reduces engine maintenance
- Longer seal and bearing life
- Lower oil consumption

Health and Safety

WARNING ! While no significant adverse effects on health are expected when properly handled and used, this product contains tricresyl phosphate (TCP) which, if taken internally, can cause paralysis.

Provide the following information to users:

- Do not use as medicine or food product.
- If swallowed, get medical assistance. If medical assistance is not immediately available, induce vomiting.
- After handling wash thoroughly and immediately with soap and water. Launder oily clothing before reuse.
- Discard oil-soaked shoes or boots.

We recommend that you obtain a Material Safety Data Bulletin and review it with users.
For this and additional technical information, call Mobil Oil Company Ltd. on 01372 22 2000.

Typical Characteristics

	Mobil Jet Oil 254	MIL-L-23699E Requirements
Viscosity,		
cSt at 40°C	27.4	25.0 min
cSt at 100°C	5.3	5.0 - 5.5
cSt at -40°C	11500	13000 max
% change at -40° C after 72 hr.	2.2	
Flash Point,° C (°F), min	263 (505)	246 (475)
Fire Point,° C (°F)	288 (550)	--
Autogenous Ignition Temp,° C (°F)	399 (720)	
Pour Point,° C (°F)	-54 (-65)	-54 (-65) max
Specific Gravity	1.0044	
TAN (mg KOH/g sample)	0.08	1.0 max
Evaporation Loss, %		
6.5 hr at 204° C (400° F), 29.5" Hg	5.0	10 max
6.5 hr at 232° C (450° F), 29.5" Hg	7.4	--
6.5 hr at 232° C (450° F), 5.5" Hg (Equals pressure at 40,000 ft altitude)	25.2	--
Foam, ml		
Sequence 1, 24° C (75° F)	10	25 max
Sequence 2, 93° C (200° F)	10	25 max
Sequence 3, 24° C (after 200° F test)	10	25 max
Foam Stability, after 1 min settling, ml	0	0 max
Rubber Swell		
F Rubber, 72 hr at 204° C (400° F), %	20	5 - 25
H Rubber, 72 hr at 70° C (158° F), %	16	5 - 25
Silicone, 96 hr at 121° C (250° F), %	9	5 - 25
Tensile Loss, %	8	30 max
Sonic Shear Stability		
KV at 39° C (100° F), change, %	0.0	4 max
Ryder Gear		
Average lb/in	2715	--
% Hercolube A	114	112 min

Mobil Oil Company Limited
Acting as Agent for Mobil Lubricants UK Limited
ExxonMobil House, Ermyn Way
Leatherhead, Surrey, KT22 8UX
Telephone: 01372 22 2000