

# Aviation Oil Elite 20W-50

## Semi-Synthetic Aviation Piston Engine Oil

### Product Description

Aviation Oil Elite 20W-50 is a premium quality, semi-synthetic, ashless-dispersant aviation piston engine oil. It is formulated from select, highly refined mineral base oils, a polyalphaolefin synthetic base oil, and ashless performance additives providing outstanding engine cleanliness, wear protection, and corrosion protection. Aviation Oil Elite 20W-50 is designed to satisfy the requirements of all opposed piston engine manufacturer's requirements under a wide range of climatic conditions.

### Features and Benefits

Extensive laboratory, engine rig and flight evaluation tests have demonstrated the excellent performance of Aviation Oil Elite 20W-50. Key features and potential benefits include the following.

Features	Benefits
High level of rust and corrosion protection	Extends the life of critical engine parts
Excellent wear protection	Long engine life
High oxidation and thermal stability	Minimizes deposits and extends engine life
Powerful dispersancy	Keeps engine parts, turbocharger bearings, propeller hub and dome, etc. clean of harmful sludge and varnish deposits
High Viscosity Index	Provides easy starting and fast lubrication of critical engine parts under low temperature conditions as well as high lubricant film strength and low wear under high temperature operating conditions
20W-50 Multi-grade	Year-round lubricant for most climates
Compatible with all commercial aviation piston engine oils - both non-dispersant and ashless dispersant type	Flexibility in use
Contains the Lycoming anti-wear/anti-scuffing additive	Compliance with FAA airworthiness directive AD 80-04-03-R2 par.b.1

### Applications

Exxon Aviation Oil Elite 20W-50 is U.S. Military approved under SAE J1899, which replaced MIL-L-22851D and is listed in the U.S. Military Qualified Products List QPL-1899. It is approved by and included in the Qualified Products Lists of Teledyne Continental, and Textron Lycoming and it is designed to satisfy the requirements of all opposed piston engine manufacturers. It provides an alternate means of compliance with FAA AD 80-04-03-R2 par.b.1.

New or newly overhauled aircraft engines should be broken in according to the engine builder's recommended procedure. Many engine manufacturers advise running in on straight mineral oils for the first 25 to 50 hours of operation. In all cases, however, the engine manufacturers recommendations should be followed, since the run in procedure can vary from engine to engine.

Aviation Oil Elite is compatible with non-dispersant mineral oils as well as other ashless-dispersant oils that meet the requirements of MIL-L-22851D/SAE J1899. It can also be used in high-time engines that have previously used a straight mineral oil. In this case it is advisable to carry out the oil-screen inspection recommended by the engine manufacturer.

## Specifications and Approvals

Aviation Oil Elite 20W-50	Is Approved Against
MIL-L-22851D/SAE J1899	X
Teledyne Continental Motors (MHS 24)	X
Textron Lycoming Spec No 301F	X

## Typical Properties

	Test Methods	Elite 20W-50 (1)
Kinematic Viscosity, cSt	ASTM D 445	
at 100°C		20.2 (16.3 min, 21.9 max)
at 40°C		180
Viscosity Index	ASTM D 2270	130
Cold Cranking Simulator (CCS) Viscosity at -15°C, cP	ASTM D 5293	7060 (9500 max)
High Temperature High Shear (HTHS) Viscosity at 150°C, cP	ASTM D 4683	5.4
Pour Point, °C (°F)	ASTM D 97	-27 (-17)
COC Flash Point, °C (°F)	ASTM D 92	258 (496)
Foam	ASTM D 892	
Seq I, mL/mL		0/0
Seq II, mL/mL		0/0 (50/0 max)
Seq III, mL/mL		0/0
Gravity, API		29.7
Density at 15.6°C, g/mL (lb/gal)	ASTM D 4052	0.877 (7.3)
Acid Number, mg KOH/g	ASTM D 664 (pH 11 end-point)	0.31 (1.0 max)
Copper Corrosion	ASTM D 130	
3 hours at 100°C		1a
3 hours at 204°C		2c
Ash Content, mass %	SAE J1747	nil
Sulfur Content, mass %		0.40

(1) Values not identified as min/max are typical and may vary within modest ranges

## Health and Safety

Based on available toxicological information, this product is not expected to produce adverse effects on health when used and handled properly. Information on use and handling, as well as health and safety information, can be found in the Material Safety Data Sheet (MSDS) which can be obtained from your local distributor or via the Internet on <http://www.exxonmobil.com/lubes>.

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