

AEROSHELL TURBINE OIL 500

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AeroShell Turbine Oil 500 is a 5 mm²/s synthetic hindered ester oil incorporating a carefully selected and balanced combination of additives to improve thermal and oxidation stability and metal passivation.

APPLICATIONS

AeroShell Turbine Oil 500 was developed essentially to meet the requirements of Pratt & Whitney 521 Type II and MIL-L-23699 specifications and is entirely suitable for most civil and military engines requiring this class of lubricant. AeroShell Turbine Oil 500 is approved for use in a wide range of turbine engines as well as the majority of accessories.

AeroShell Turbine Oil 500 contains a synthetic ester oil and should not be used in contact with incompatible seal materials and it also affects some paints and plastics. Refer to the General Notes at the front of this section for further information.

SPECIFICATIONS

U.S.	Approved MIL-PRF-23699F Grade STD
British	Approved DEF STAN 91-101 Grade OX-27
French	Equivalent DCSEA 299/A
Russian	–
NATO Code	O -156
Joint Service Designation	OX-27
Pratt & Whitney	Approved 521C Type II
General Electric	Approved D-50 TF 1
Allison	Approved EMS-53 (Obsolete)

EQUIPMENT MANUFACTURER'S APPROVALS

AeroShell Turbine Oil 500 is approved for use in all models of the following engines:

Honeywell	TFE 731, TPE 331, GTCP 30, 36, 85, 331, 660 and 700 series APUs. ALF 502, LF507, LTS101, LTP101, T53, T55, AL5512
Allison (Rolls-Royce)	250 Series, 501 D13, T56, GMA 2100, GMA 3007
BMW-Rolls Royce	BR710, BR715
CFM International	CFM 56 cleared for flight evaluation
GE	GE 90, CF6, CT58, CF700, CJ610, CJ805, CF34, CT7, CT64
IAE	V2500 Series, all marques
Motorlet	M601D, E and Z
Pratt & Whitney	JT3, JT4, JT8, JT9, JT12, PW4000, PW6000
Pratt & Whitney Canada	JT15, PT6A, PT6T, ST6, PW100, PW200, PW300, PW500
Rolls-Royce	RB211-22B, -524, -535, Trent, Tay, Gnome, Spey, RB183, Adour, M45H, Viper (Series MK 301, 521, 522, 526, 535, 540, 601, 623 and 632)

Full details of the approval status of AeroShell Turbine Oil 500 in APUs and other engines/accessories is available.

PROPERTIES	MIL-PRF-23699F Grade STD	TYPICAL
Oil Type	Synthetic ester	Synthetic ester
Kinematic Viscosity mm ² /s @ 100°C @ 40°C @ -40°C	4.90 to 5.40 23.0 min 13000 max	5.17 25.26 8996
Flashpoint, Cleveland Open Cup °C	246 min	256
Pourpoint °C	-54 max	<-54
Total Acidity mgKOH/g	1 max	0.01
Evaporation Loss 6.5 hrs @ 204°C %m	10.0 max	2.52
Foaming	Must pass	Passes
Swelling of Standard Synthetic Rubber SAE-AMS 3217/1, 72 hrs @ 70°C swell % SAE-AMS 3217/4, 72 hrs @ 204°C swell % standard silicone rubber 96 hrs @ 121°C	5 to 25 5 to 25 5 to 25	Within Limits Within Limits Within Limits
Thermal Stability/Corrosivity 96 hrs @ 274°C - metal weight change mg/cm ² - viscosity change % - Total Acid Number Change mgKOH/g	4 max 5 max 6 max	0.5 2.69 2.03

PROPERTIES	MIL-PRF-23699F Grade STD	TYPICAL
Corrosion & Oxidation Stability 72 hrs @ 175°C 72 hrs @ 204°C 72 hrs @ 218°C	Must pass Must pass Must pass	Passes Passes Passes
Ryder Gear Test, Relative Rating Hercolube A % 102	117	
Bearing Test Rig Type 1 ^{1/2} conditions - Overall deposit demerit rating - viscosity change @ 40°C % - Total Acid Number change mgKOH/g - filter deposits g	80.0 max -5 to +30 2 max 3 max	47 19 1.1 0.4
Sonic shear stability - viscosity change @ 40°C %	4 max	NIL
Trace metal content	Must pass	Passes
Sediment mg/l	10 max	2.6
Ash mg/l	1 max	0.05

AeroShell Turbine Oil 500 is also approved for use in the industrial and marine versions of the Rolls Royce Trent, Avon, Allison 501K and 570K, Honeywell TF35, Pratt & Whitney GG3/FT3, GG4/FT4, GG12/FT12, all General Electric LM Series of units, Turbomeca industrial engines and certain Solar gas turbine engines.

A viscosity/temperature chart is shown at the end of this section.