

AEROSHELL TURBINE OIL 555

AeroShell Turbine Oil 555 is an advanced 5 mm²/s synthetic hindered ester oil incorporating a finely balanced blend of additives to improve thermal and oxidation stability and to increase the load carrying ability of the base oil.

APPLICATIONS

AeroShell Turbine Oil 555 was specifically developed to meet the high temperatures and load carrying requirements of SST engines and the DEF STAN 91-100 (formerly DERD 2497) and XAS-2354 specifications. AeroShell Turbine Oil 555 was also designed to give enhanced performance in current engines.

More recently with the need to transmit more power and higher loads through helicopter transmission and gearbox systems (many helicopters use a synthetic turbine engine oil in the transmission/gearbox system) it has become apparent that the use of a very good load carrying oil, such as AeroShell Turbine Oil 555 is necessary. This in turn has led to the development of a U.S. Military Specification, DOD-L-85734, which covers a helicopter transmission oil against which AeroShell Turbine Oil 555 is fully approved.

AeroShell Turbine Oil 555 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 DOD-L-85734
British	Approved DEF STAN 91-100 Note: both UK and US production are manufactured to the same formulation.
French	–
Russian	–
NATO Code	O-160
Joint Service Designation	OX-26
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 555 is approved for use in all models of the following engines:

Honeywell	Auxiliary Power Units GTCP 30, 36, 85, 331, 660 and 700 series
General Electric	CT58, CT64, CF700, CJ610
Motorlet	MD601D, E and Z
Pratt & Whitney	JT3, JT4, JT8, JT9, JT12, PW4000
Pratt & Whitney Canada	ST6, PW200
Rolls-Royce	Trent, Adour, Gem, Gnome, M45H, Olympus 593, RB199
Turbomeca	Makila
IAE	V2500 Series, all marques

EQUIPMENT MANUFACTURER'S APPROVALS – HELICOPTER TRANSMISSIONS

AeroShell Turbine Oil 555 is approved for an increasing number of helicopter transmissions, whilst details are listed below, it is important that operators check latest status with the helicopter manufacturer. In all cases it is important to check compatibility with seals used in the transmission/gearbox.

US Military	Approved for helicopter transmission specification DOD-L-85734
Eurocopter	Approved for Super Puma, for other helicopters check with Eurocopter
Agusta	Approved for A109 and A129 models, for other models check with Agusta
Bell Helicopter Textron	Approved for all Bell turbine engine powered helicopters
Boeing Vertol	Approved for Chinook
McDonnell Douglas	Approved
MBB	Approved
Sikorsky	Approved for S-61N (note other types such as the S-70 and S-76 do not use synthetic turbine oils in the transmission)
Westland Helicopters	Approved for some models

PROPERTIES	DOD-L-85734	TYPICAL
Oil Type	Synthetic ester	Synthetic ester
Kinematic Viscosity @ 98.9°C @ 37.8°C @ -40°C	mm ² /s 5.0 to 5.5 25.0 min 13000 max	5.4 29.0 11000
Flashpoint, Cleveland Open Cup	°C 246 min	>246
Pourpoint	°C -54 max	Below -54
Total Acidity	mgKOH/g 0.5 max	0.3
Evaporation Loss 6.5 hrs @ 204°C	% m 10.0 max	2.6
Foaming	Must pass	Passes
Swelling of Standard Synthetic Rubber		
SAE-AMS 3217/1, 72 hrs @ 70°C	swell % 0 to 25	14
SAE-AMS 3217/4, 72 hrs @ 204°C	swell % 0 to 25	14
Thermal Stability/Corrosivity 96 hrs @ 274°C		
- metal weight change	mg/cm ² 4 max	-0.97
- viscosity change @ 37.8°C	% 5 max	-1.2
- Total Acid Number Change	mgKOH/g 6 max	2

Table continued

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PROPERTIES	DOD-L-85734	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 %	145	>145
Bearing Test Rig Type 1½ conditions – Overall deposit demerit rating – viscosity change @ 37.8°C % – Total Acid Number change mgKOH/g – filter deposits g	80.0 max –5 to +30 2 max 3 max	22 21 0.83 0.5
Sonic shear stability – viscosity change @ 40°C %	4 max	NIL
Trace metal content	Must pass	Passes
Sediment mg/l	10 max	Passes
Ash mg/l	1 max	Passes

AeroShell Turbine Oil 555 is also approved for use in the industrial and marine versions of the Rolls-Royce RB211-22 and Olympus engines, General Electric LM 100, 250, 350, 1500 and 2500 engines.

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