AEROSHELL FLUID 41

AeroShell Fluid 41 is a mineral hydraulic oil manufactured to a very high level of cleanliness, and possesses improved fluid properties. AeroShell Fluid 41 contains additives which provide excellent low temperature fluidity as well as exceptional anti-wear, oxidation - corrosion inhibition and shear stability. In addition metal de-activators and foam inhibitors are included in this high viscosity index fluid to enhance performance in hydraulic applications. AeroShell Fluid 41 is capable of wide temperature range operation.

AeroShell Fluid 41 is dyed red.

APPLICATIONS

AeroShell Fluid 41 is intended as a hydraulic fluid in all modern aircraft applications requiring a mineral hydraulic fluid. AeroShell Fluid 41 is particularly recommended where use of a "superclean" fluid can contribute to improvements in component reliability, and can be used in aircraft systems operating unpressurised between –54°C to 90°C and pressurised between –54°C to 135°C.

AeroShell Fluid 41 should be used in systems with synthetic rubber components and must not be used in systems incorporating natural rubber. Refer to the General Notes at the front of this section for further information.

AeroShell Fluid 41 is compatible with AeroShell Fluids 4, 31, 51, 61 and 71 and SSF/LGF.

Chlorinated solvents should not be used for cleaning hydraulic components which use AeroShell Fluid 41. The residual solvent contaminates the hydraulic fluid and may lead to corrosion.

SPECIFICATIONS

U.S.	Approved MIL-PRF-5606H* (both U.S. and European production)
British	Approved DEF STAN 91-48 Grade Superclean* (European production only) Meets DEF STAN 91-48 Grade Normal (European production only) Equivalent to DEF STAN 91-48 Grades Superclean* & Normal (U.S. production only)
French	Approved DCSEA 415/A
Russian	Analogue to AMG-10
NATO Code	H-515* (equivalent H-520)
Joint Service Designation	OM-15* (equivalent OM-18)

*Superclean grades

The British specification DEF STAN 91-48 covers two grades (normal and superclean) of mineral hydraulic fluid which differ only in their cleanliness limits. AeroShell Fluid 41 is manufactured to meet the superclean requirements and thus it also meets the requirements of the normal grade.

PROPERTIES	MIL-PRF-5606H	TYPICAL	
		U.S. Production	European Production
Oil type	Mineral	Mineral	Mineral
Kinematic viscosity mm^2/s			
@ 100°C	4.90 min	6.13	5.30
@ 40°C	13.2 min	15.68	14.1
@ –40°C	600 max	384	491
@ –54°C	2500 max	1450	2300
Viscosity index	–	214	Over 200
Flashpoint, Pensky Martin closed cup °C	82 min	104	105
Autoignition temperature °C	–	230	230
Pourpoint °C	–60 max	<–60	<–60
Total acid number mgKOH/g	0.20 max	0	0.01
Evaporation loss 6 hrs @ 71°C %m	20 max	16.5	10
Water content ppm	100 max	55	<100
Relative density @15.6/15.6°C	Report	0.874	0.87
Colour	Red	Red	Red
Particulate contamination, number of particles per 100 ml in size range			
5 to 15 µm	10000 max	1200	808
15 to 25 µm	1000 max	550	116
25 to 50 µm	150 max	70	44
50 to 100 µm	20 max	5	10
over 100 µm	5 max	0	1

PROPERTIES	MIL-PRF-5606H	TYPICAL	
		U.S. Production	European Production
Copper corrosion	2e max	lb	2b
Steel on steel wear, scar diam, mm	1.0 max	0.65	0.95
Rubber swell, L rubber %	19 to 30	22	25.4
Corrosiveness & oxidation, 168 hrs @ 135°C			
– metal weight change	Must pass	Passes	Passes
– viscosity change @ 40°C %	–5 to +20	8.08	+0.1
– acid number change mgKOH/g	0.20 max	0.02	+0.1
Low temperature stability 72 hrs @ –54°C	Must pass	Passes	Passes
Shear stability			
– viscosity change @ 40°C	Must pass	Passes	Passes
– acid number change	0.2 max	Less than 0.2	Less than 0.2
Gravimetric filtration mg/100ml	0.3 max	0.1	Less than 0.3
filtration time min	15 max	10	Less than 15
Foaming tendency	Must pass	Passes	Passes
Barium content ppm	10 max	Nil	Nil

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