Technical Data Sheet

AeroShell **Fluid *41 (US)***

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.

DESIGNED TO MEET CHALLENGES

Main Applications

AeroShell Fluid 41 is intended as an 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.

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.

Due to its properties, it is also used in several industrial applications.

Specifications, Approvals & Recommendations

- MIL-PRF-5606J
- COMAC QPL-CMS-OL-104
- NATO Code H-515 (equivalent H-520 normal grade)
- Analogue to AMG-10 (Russian)

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

Typical Physical Characteristics

Properties			Method	MIL-PRF-5606 J	Typical
Oil Type				Mineral	Mineral
Kinematic viscosity	@100°C	mm²/s	ASTM D445	4.90 minimum	4.9
Kinematic viscosity	@40°C	mm²/s	ASTM D445	13.2 minimum	13.2
Kinematic viscosity	@–40°C	mm²/s	ASTM D445	600 maximum	600
Kinematic viscosity	@–54°C	mm²/s	ASTM D445	2 500 maximum	2 500
Flashpoint		°C	ASTM D93	82 minimum	93
Pour Point		°C	ASTM D5949	-60 maximum	-62
Total acid number		mgKOH/g	ASTM D664	0.20 maximum	0.04
Evaporation loss 6 hrs	@71°C	%m	ASTM D972	20 maximum	10.4
Water content		mg/kg	ASTM D6304	100 maximum	50
Relative density	@15.6/15.6°C		ASTM D4052	Report	0.870
Colour			ASTM D1500	Red	Red
Particulate contamination, number of particles per 100 ml in size range		5 to 15 µm	FED-STD-791-3012	8 000 maximum	1 200

Properties			Method	MIL-PRF-5606 J	Typical
Particulate contamination, number of particles per 100 ml in size range		16 to 25 µm	FED-STD-791-3012	1 425 maximum	1 425 maximum
Particulate contamination, number of particles per 100 ml in size range		26 to 50 µm	FED-STD-791-3012	253 maximum	253 maximum
Particulate contamination, number of particles per 100 ml in size range		51 to 100 µm	FED-STD-791-3012	45 maximum	45 maximum
Particulate contamination, number of particles per 100 ml in size range		over 100 µm	FED-STD-791-3012	8 maximum	8 maximum
Particle Count		Number	SAE AS4059	5	5 maximum
Copper corrosion			ASTM D130	2e maximum	2b
Steel on steel wear, scar diam		mm	ASTM D4172	1.0 maximum	0.6
Rubber swell, L rubber 168 hrs	@70°C	%	ASTM D4289	19.0 to 30.0	Passes
Low temperature stability 72 hrs	@-54°C		FED-STD-791-3458	Must Pass	Passes
Gravimetric analysis		mg/100mL	ASTM D4898	1.0 maximum	Passes
Foaming tendency			ASTM D892	Must Pass	Passes
Barium content		mg/kg	ASTM D5185	10 maximum	Nil

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**

  This product is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Safety Data Sheet.

- **Protect the Environment**

  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**

  Advice on applications not covered here may be obtained from your Shell representative.