Technical Data Sheet

AeroShell Fluid *61* ***Hydraulic Oil MIL-PRF-46170D***

AeroShell Fluid 61 is a synthetic hydrocarbon base hydraulic fluid specifically inhibited to provide excellent oxidation stability for the oil and good corrosion preventive protection to the hydraulic system.

DESIGNED TO MEET CHALLENGES

Main Applications

- AeroShell Fluid 61 is designed for use where a fire resistant preservative grade hydraulic fluid is required and is suitable for operational use as well as preservation of components during storage and shipment.
- AeroShell Fluid 61 has an operating temperature range of –40°C to +204°C.
- AeroShell Fluid 61 is compatible with AeroShell Fluids 4, 31, 41, 51 and 71.
- AeroShell Fluid 61 is a synthetic oil and should not be used in contact with incompatible seal materials.
- Chlorinated solvents should not be used for cleaning hydraulic components which use AeroShell Fluid 61. The residual solvent contaminates the hydraulic fluid and may lead to corrosion.

Specifications, Approvals & Recommendations

- Approved MIL-PRF-46170D Type I* (US)
- NATO Code H-544

*The US specification covers two grades, Type I and Type II. The only difference between the two grades is that Type II is dyed red for aerospace use whereas Type I is undyed.

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Typical Physical Characteristics

Properties			MIL-PRF-46170D Type I	Typical
Oil type			-	Synthetic Hydrocarbon
Kinematic viscosity	@100°C	mm²/s	3.4 min	5.73
Kinematic viscosity	@40°C	mm²/s	19.5 min	20.1
Kinematic viscosity	@–40°C	mm²/s	2600 max	2488
Kinematic viscosity	@–54°C	mm²/s	-	15022
Flashpoint (Cleveland Open Cup)		°C	218 min	233
Fire Point (Cleveland Open Cup)		°C	246 min	248
Acid or Base Number		mgKOH/g	0.2 max	0.07
Evaporation loss 22 hrs	@149°C	□ m	5.0 max	2.39
Relative density	@15.6/15.6°C		-	0.859
Pourpoint		°C	-54 max	Below -60
Water Content		ppm	500 max	278
Auto-ignition temperature		°C	343 min	354
Colour			Undyed	Undyed
Particle Count, Automatic, per Lt		5 to 25 µm	10000 max	1414
Particle Count, Automatic, per Lt		26 to 50 µm	250 max	39
Particle Count, Automatic, per Lt		51 to 100 µm	50 max	4
Particle Count, Automatic, per Lt		over 100 µm	10 max	0
Trace sediment		mg/l	0.005 max	0.001
Rubber Swell 168 hrs	@70°C	□ swell	15 to 25	21.5

Properties			MIL-PRF-46170D Type I	Typical
4-Ball Wear, 75°C - scar dia	**147N load / 1200 rpm**	**mm**	0.3 max	0.23
4-Ball Wear, 75°C - scar dia	**392N load / 1200 rpm**	**mm**	0.65 max	0.38
Galvanic corrosion			Must pass	Passes
Corrosiveness & oxidation stability (168 hrs @ 121°C) - metal weight change			Must Pass	Passes
Corrosiveness & oxidation stability (168 hrs @ 121°C) -@40°C viscosity change		**%**	±10 Max	Less than 10
Corrosiveness & oxidation stability (168 hrs @ 121°C) - change in acidity		**mgKOH / g**	0.3 max	Less than 0.3
Low temperature stability			Must pass	Passes
Rust prevention			Must pass	Passes
Flammability			Must pass	Passes

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**
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/
- **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.