Technical Data Sheet

AeroShell **Fluid *61 (NA)***

AeroShell Fluid 61 (NA) 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 (NA) 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 (NA) has an operating temperature range of –40°C to +204°C.
- AeroShell Fluid 61 (NA) is compatible with AeroShell Fluids 4, 31, 41, 51 and 71.
- AeroShell Fluid 61 (NA) 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 (NA). 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.

Typical Physical Characteristics

Properties			Method	MIL-PRF-46170D Type I	Typical
Oil type				-	Synthetic Hydrocarbon
Kinematic viscosity	@100°C	mm²/s		3.4 min	3.71
Kinematic viscosity	@40°C	mm²/s		19.5 max	15.43
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 maximum		-54	-54
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

Properties			Method	MIL-PRF-46170D Type I	Typical
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
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) - viscosity change	@40°C	%		±10 max	Less than 10
Corrosiveness & oxidation stability (168 hrs @ 121°C) - change in acidity		mgKOH/g maximum		0.3	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 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.