



# AeroShell SSF

AeroShell Shock Strut Fluid (SSF) is a mineral hydraulic fluid (MIL-PRF-6083) to which additional additives have been added to improve the extreme pressure characteristics and the fluid's natural lubricity. The lubricity agent provides a stable thin film layer to the metal surfaces at mild operating conditions. When severe conditions exist (landing/touchdown), the extreme pressure additive supplies the load carrying needed at the metal-to-metal surfaces to prevent the occurrence of such phenomena as "ladder cracking" and "slip stiction" of the piston component of the landing gear. AeroShell SSF is AeroShell Fluid 71 plus additives.

## DESIGNED TO MEET CHALLENGES

### Main Applications

- AeroShell SSF is recommended for all normal applications.
- AeroShell SSF is compatible with AeroShell LGF and also with AeroShell Fluids 4, 41 and 71.
- AeroShell SSF is straw yellow in colour.

### Specifications, Approvals & Recommendations

- Boeing - BMS 3-32A (Type I)
- McDonnell Douglas - DPM-6177
- AeroShell SSF is not covered by any military specification.

AeroShell SSF is approved for use in the shock struts of the following aircraft:

- Boeing 707/720, 727, 737, 747 (except those using BMS 3-11 fluids), 757, 767 and 777
- Lockheed L1011 Tristar
- McDonnell Douglas DC-8, DC-9, DC-10, MD-80, MD-11
- Airbus CML Code 02-004A

For use in the landing gear shock struts of other aircraft, operators must check with the respective manufacturer first.

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

### Typical Physical Characteristics

Properties	Method		LGF Typical
Base hydraulic fluid specification			MIL-PRF-6083F
Kinematic viscosity	@ 40°C	mm <sup>2</sup> /s	14.5
Kinematic viscosity	@ -40°C	mm <sup>2</sup> /s	560
Kinematic viscosity	@ -54°C	mm <sup>2</sup> /s	2640
Flashpoint	°C		108
Neutralisation number	mgKOH/g		2.6
Evaporation (22 hrs)	@ 99°C	%	65
Relative Density	@ 15.6/15.6°C		0.882
Pour Point	°C		-62
Foaming Seq I, Foam/collapse time	sec		30/30
Foaming Seq II, Foam/collapse time	sec		20/10
Foaming Seq III, Foam/collapse time	sec		30/30
Corrosiveness and oxidation stability (168 hrs) Metal weight change - Copper	@ 121°C	mg/cm <sup>2</sup>	0.002
Corrosiveness and oxidation stability (168 hrs) Metal weight change - Aluminium	@ 121°C	mg/cm <sup>2</sup>	0
Corrosiveness and oxidation stability (168 hrs) Metal weight change - Steel	@ 121°C	mg/cm <sup>2</sup>	0
Corrosiveness and oxidation stability (168 hrs) Metal weight change - Magnesium	@ 121°C	mg/cm <sup>2</sup>	0.002

Properties	Method	LGF Typical
Corrosiveness and oxidation stability (168 hrs) Metal weight change - Cadmium @ 121°C	mg/cm <sup>2</sup>	0
Fluid properties - change in viscosity	%	+15
Fluid properties - change in acid number	mgKOH/g	+0.5
Fluid properties - insolubles		1.0 mg/100 ml
4-ball wear, scar diam	mm	0.43
Colour		Yellow

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**

AeroShell SSF 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 Material Safety Data Sheet, which can be obtained from your Shell representative.

- **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.