



Shell Aviation

AEROSHELL® HYDRAULIC FLUIDS

SPECIFICATIONS

| Product | Properties | Specifications and approvals (Full approval details can be obtained from your AeroShell representative.) |
|---|--|---|
| In-service hydraulic fluids | | |
| AeroShell Fluid 41 | ■ Super clean ■ Mineral | MIL-PRF-5606H |
| AeroShell Fluid 31 | ■ Super clean ■ Fire resistant ■ Synthetic | MIL-PRF-83282D |
| Preservative hydraulic fluids | | |
| AeroShell Fluid 61 | ■ Inhibited ■ Synthetic | MIL-PRF-46170D |
| AeroShell Fluid 71 | ■ Inhibited ■ Mineral | MIL-PRF-6083G |
| Extreme-pressure hydraulic fluid | | |
| AeroShell Landing Gear Fluid | ■ Extreme pressure ■ Low temperature ■ Mineral | BMS 3-32 Type 2 |
| Extreme-pressure, preservative hydraulic fluid | | |
| AeroShell Shock Strut Fluid | ■ Inhibited ■ Extreme pressure ■ Mineral | BMS 3-32 Type 1 |

A COMPREHENSIVE AND PROVEN RANGE

AeroShell is a comprehensive and proven product range. All new products undergo extensive testing. Our experts can also offer helpful and problem-solving technical support.

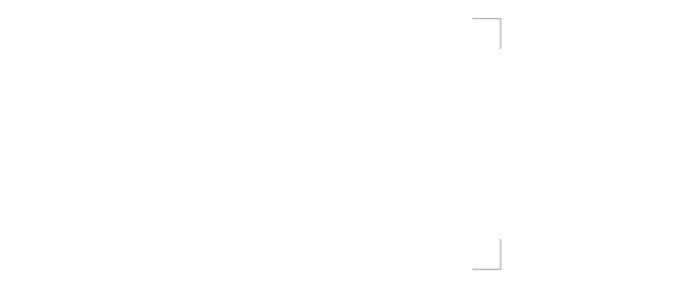
Whatever you fly, we can provide a full range of AeroShell products to meet your needs, including

- **AeroShell Turbine Oil 560**, proven performance for modern turbine engines
- **AeroShell Grease 33**, the universal airframe grease used as a firstfill product by both Boeing and Airbus.



CONTACT US

For further information, please contact your AeroShell representative:



www.aeroshell.com



AEROSHELL HYDRAULIC FLUIDS

Shell offers a wide range of hydraulic fluids designed to protect aircraft hydraulic systems. These products include fire-resistant and super-clean fluids for enhanced reliability, extreme-pressure fluids designed to protect landing gear shock struts from wear, and specialist preserving fluids for hydraulic system components in storage.

MEET THE FAMILY

AEROSHELL FLUID 41

SUPER-CLEAN, MINERAL HYDRAULIC FLUID

■ Approved to MIL-PRF-5606H

AeroShell Fluid 41 is a super-clean, mineral hydraulic fluid offering system reliability by protecting against system failure through super cleanliness.

■ **enhanced** system reliability by protecting against system failure through super cleanliness
■ **long component life** through its anti-wear, antioxidant and corrosion inhibition system and shear stability performance
■ **system efficiency** through its low-temperature performance and a high viscosity index.

AeroShell Fluid 41 is intended for operational use in modern aircraft applications requiring a mineral hydraulic fluid. It is particularly recommended where the use of a super-clean fluid could help to improve component reliability. AeroShell Fluid 41 is also widely used in non-aviation applications such as cranes, military vehicles and circuit breakers where an extreme temperature range and high system reliability are required.

AeroShell Fluid 41 is fully compatible with AeroShell Fluids 31, 61 and 71, and AeroShell SSF (shock strut fluid) and AeroShell LGF (landing gear fluid) (refer to the *AeroShell Book* for full details).

"WE USE AEROSHELL FLUID 41 AND RECEIVE GREAT CUSTOMER SERVICE FROM THE AEROSHELL AUTHORIZED DISTRIBUTOR."

Manager Technical Materials and Services Procurement,
Kenya Airways



Fluid selection depends on the operational system requirements and manufacturer's recommendations. AeroShell Fluid 41 is suitable for use in systems with synthetic rubber components but must not be used in systems incorporating natural rubber.

To maintain the super-clean quality of AeroShell Fluid 41, users must apply strict handling procedures, as specified in equipment manuals.

AEROSHELL FLUID 71

PRESERVATIVE, MINERAL HYDRAULIC FLUID

■ Approved to MIL-PRF-6083G

AeroShell Fluid 71 is a preservative, mineral fluid for hydraulic components in storage. It is based on AeroShell Fluid 41 but with additional additives that help to improve its corrosion prevention properties in addition to AeroShell Fluid 41's already strong oxidation stability and anti-wear characteristics.

AeroShell Fluid 71 is compatible with other AeroShell Fluids, including 31, 41 and 61 (refer to the *AeroShell Book* for full details). This compatibility enables customers to change from AeroShell Fluid 71 to AeroShell Fluid 41 without needing to drain and flush the system.

AEROSHELL FLUID 31

SUPER-CLEAN, FIRE-RESISTANT, SYNTHETIC HYDRAULIC FLUID

■ Approved to MIL-PRF-83282D

To improve aircraft safety, manufacturers are increasingly recommending the use of super-clean, fire-resistant, synthetic hydraulic fluids such as AeroShell Fluid 31. Compared with mineral hydraulic fluids, AeroShell Fluid 31 has a higher¹ flash point for greatly improved fire resistance. It also helps to prevent hydraulic system failure by being manufactured using super-clean procedures.

AeroShell Fluid 31 is specially designed to protect hydraulic systems and keep them running efficiently through its base oil and advanced additives. These components combine to give the fluid good low-temperature performance, thermal stability, oxidation and corrosion resistance, wear protection and anti-foaming properties.

¹Compared with standard mineral-based fluid to MIL-PRF-5606

RELIABILITY

Particulates in hydraulic fluids can cause system failures through valve sticking, wear and blockages in nozzles and tubes. Particulates are especially challenging for modern hydraulic systems that operate at high pressures and have components with tight tolerances.

AeroShell Fluids 31 and 41 are formulated to protect hydraulic systems against failure by meeting super-clean standards. Their particulate contents are tightly controlled through special manufacturing processes, including multistage filtration, container cleaning just before filling and clean-room packaging conditions.

AEROSHELL FLUID 61

PRESERVATIVE, SYNTHETIC HYDRAULIC FLUID

■ Approved to MIL-PRF-46170D

AeroShell Fluid 61 is a preservative, synthetic fluid for hydraulic components in storage. It is based on AeroShell Fluid 31, which is specially designed to provide strong fluid oxidation stability and good hydraulic-system corrosion protection, but with additional additives that help to improve its corrosion prevention properties.²

AeroShell Fluid 61 is compatible with other AeroShell Fluids, including 31, 41 and 71 (refer to the *AeroShell Book* for full details). This compatibility enables customers to change from AeroShell Fluid 61 to AeroShell Fluid 31 without needing to drain and flush the system.

²Specifications required improved performance relative to AeroShell Fluid 31

"WE ARE SATISFIED WITH THE PERFORMANCE OF AEROSHELL FLUID 41. WE HAVE NOT RECEIVED ANY NEGATIVE FEEDBACK FROM OUR MAINTENANCE DEPARTMENT."

Firmansyah, Procurement Manager, PT Deraya



AEROSHELL LGF

EXTREME-PRESSURE HYDRAULIC FLUID

■ Qualified to Boeing BMS 3-32 Type 2

AeroShell LGF (landing gear fluid) is a mineral hydraulic fluid based on AeroShell Fluid 41 with additives that provide extreme-pressure performance and enhanced lubricity. The extreme-pressure additive helps to protect components from metal-to-metal wear during landings. AeroShell LGF is an in-service fluid with good low-temperature properties that make it particularly suitable for low-temperature operations. AeroShell LGF is compatible with AeroShell SSF and AeroShell Fluids 41 and 71.



AEROSHELL SSF

EXTREME-PRESSURE, PRESERVATIVE HYDRAULIC FLUID

■ Qualified to Boeing BMS 3-32 Type 1

AeroShell SSF (shock strut fluid) is a preservative mineral hydraulic fluid based on AeroShell Fluid 71 but with additives to boost its extreme-pressure performance and lubricity that help to protect components from metal-to-metal wear during landings. AeroShell SSF can also be used in normal operations. It is compatible with AeroShell LGF and AeroShell Fluids 41 and 71.

