



# AEROSHELL FLUID 31

## SYNTHETIC FIRE RESISTANT HYDRAULIC FLUID

### DESCRIPTION

AeroShell Fluid 31 is a 'synthetic hydrocarbon base' aircraft hydraulic fluid having excellent low temperature viscosity properties and greatly improved fire resistant characteristics. It contains high technology additives to achieve increased oxidation stability, corrosion resistance, anti-wear, and anti-forming protection.

AeroShell Fluid 31 is superclean filtered to ensure optimum performance in particulate sensitive systems.

AeroShell Fluid 31 is designed for use in aircraft systems, missile, ordnance hydraulic systems using synthetic materials and is suitable for use at operating temperatures from -40°C to 204°C

AeroShell Fluid 31 is a synthetic oil and should not be used in contact with incompatible seal materials, ie natural rubber elastomers. AeroShell Fluid 31 is dyed red for ease of identification and to assist in the detection of leaks.

### PERFORMANCE FEATURES

- AeroShell Fluid 31 has been formulated to provide exceptionally good anti wear performance under both high and low load conditions. These lubrication properties are further enhanced by the low frictional characteristics to prevent the occurrence of stick-slip ensuring smooth precise control from the hydraulic system.
- AeroShell Fluid is compatible with AeroShell 4, 41, and 71 and can be used in systems designed to operate with MIL-H-5606, MIL-H-6083, MIL-H-87257 and MIL-H-46170 fluids.
- The life expectancy of a hydraulic oil at elevated temperatures is determined by its ability to resist oxidation in the presence of air, moisture and metals. This oxidation process produces sludge and acidic products which AeroShell Fluid 31 has shown to resist better than other hydraulic oils.
- Several civil aircraft manufacturer now recommend this type of product for use in aircraft hydraulic systems in preference to mineral hydraulic oils due to fire resistant characteristics.
- AeroShell Fluid 31 is also recommended for non-aviation applications such as, armoured military vehicles and equipment. It is also used extensively in cool storage facilities.

### SUMMARY OF BENEFITS

- **Good fire resistance** characteristic when compared with conventional petroleum products.
- **Enhanced reliability** of all components in hydraulic systems



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- **Good low temperature viscosity** properties and improved lubricity characteristics that enable AeroShell Fluid 31 operate in high temperature applications.
- **Qualified** to MIL-H-83282C fluid <sup>1</sup> which provides compatibility with other similarly qualified oils.
- **Improved** Equipment Life and decreased down time due to the superior wear prevention and corrosion protection.
- **Long** Fluid Life due to enhanced oxidation stability and thermal stability.

### HEALTH & SAFETY

AeroShell Fluid 31 is unlikely to present any significant health or safety hazard when properly used in the recommended application, and good standards of industrial and personal hygiene are maintained.

For further guidance on Product Health & Safety refer to the appropriate Shell Material Safety Data Sheet.

### SPECIFICATIONS/APPROVALS

US	MIL-H-83282C
British	-
NATO	H-537
Joint Service Designation	OX-19

AeroShell Fluid 31 is also approved for use in Allied Signal cooling turbine (cabin gas compressors)

### TYPICAL CHARACTERISTICS

DESCRIPTION	UNITS	METHODS	TYPICAL
APPEARANCE	VISUAL	-	Red
DENSITY @ 15°C	kg/L	-	0.850
VISCOSITY AT 205°C	mm <sup>2</sup> /s	-	1.08
VISCOSITY AT 100°C	mm <sup>2</sup> /s	-	3.62
VISCOSITY AT 40°C	mm <sup>2</sup> /s	-	14.5
VISCOSITY AT -40°C	mm <sup>2</sup> /s	-	2100
POUR POINT	°C	-	< -55
FIRE POINT (COC)	°C	-	254
TAN	mg KOH/g	-	0.01

### ADVICE

Advice on applications not covered in this leaflet may be obtained from your Shell

<sup>1</sup> A qualified product must be blended and packed in the plant listed on the QPL to ensure that the base oil is made in an approved refinery and that the product is blended and packed in an approved and closely monitored facility.



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Representative. Shell Technical Advice Centre: Free Call 1800 805 000.

### Document Information

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