



AeroShell Fluid 602

AeroShell Fluid 602 synthetic base fluid is composed of highly branched, compact and very stable molecules known as polyalphaolefins (PAO), blended with additives to provide long term storage stability.

AeroShell Fluid 602 offers exceptional performance over a wide temperature range and does not react with water, resulting in clean systems and long fluid and component life.

DESIGNED TO MEET CHALLENGES

Main Applications

AeroShell Fluid 602 is most widely used as a cooling fluid for aircraft avionic systems, whose benefits include lower initial cost, longer fluid life, lower weight and lower toxicity when compared with other types of avionic system coolants. Since AeroShell Fluid 602 does not react with water, no reclamation equipment is required, adding further to the cost advantage.

Specifications, Approvals & Recommendations

- Approved MIL-PRF-87252C (US)
- NATO Code S-1748

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

Typical Physical Characteristics

Properties		MIL-PRF-87252C	Typical
Relative Density	@15.6/15.6°C	-	0.799
Viscosity	@100°C mm ² /s	1.65 min	1.77
Viscosity	@40°C mm ² /s	5.0 min	5.29
Viscosity	@-40°C mm ² /s	300 max	280
Viscosity	@-54°C mm ² /s	1300 max	1094
Viscosity Index		-	145
Pour point	°C	-	-73
Flash point	°C	150 min	160
Fire point	°C	160 min	171
Evaporation loss 6.5 hrs	@204°C %m	-	17
Total Acid Number	mgKOH/g	0.2 max	< 0.01
Water content, Karl Fischer	ppm	50 max	35
Density g/cc Dilatometer	@0°C	-	0.8058
Density g/cc Dilatometer	@100°C	-	0.7392
Density g/cc Dilatometer	@190°C	-	0.6768
Specific Heat	@-17.8°C cal/g°C	-	0.49
Specific Heat	@37.8°C cal/g°C	-	0.54
Specific Heat	@149°C cal/g°C	-	0.63
Specific Heat	@260°C cal/g°C	-	0.72
Thermal Conductivity cal/hr cm ²	@-17.8°C (°C/cm)	-	1.26
Thermal Conductivity cal/hr cm ²	@37.8°C (°C/cm)	-	1.21
Thermal Conductivity cal/hr cm ²	@149°C (°C/cm)	-	1.12
Thermal Conductivity cal/hr cm ²	@260°C (°C/cm)	-	1.02
Coefficient of Thermal Expansion Dilatometer	0 to 50°C 1/°C	-	0.00083

Properties			MIL-PRF-87252C	Typical
Coefficient of Thermal Expansion Dilatometer	50 to 100°C	1/°C	-	0.00092
Coefficient of Thermal Expansion Dilatometer	100 to 150°C	1/°C	-	0.00103
Coefficient of Thermal Expansion Dilatometer	150 to 190°C	1/°C	-	0.00117
Dielectric Constant		400 Hz	-	2.10
Power Factor		400 Hz	-	< 0.0001
Dielectric breakdown Voltage		Kv	35 min	47
Volume Resistivity	@25°C	ohm-cm	1.0 x 10 ¹⁰ min	2.9 x 10 ¹⁵
Particle Count, Automatic		5 to 15 µm	10000 max	2664
Particle Count, Automatic		16 to 25 µm	1000 max	345
Particle Count, Automatic		26 to 50 µm	150 max	86
Particle Count, Automatic		51 to 100 µm	20 max	10
Particle Count, Automatic		< 100 µm	5 max	0
Elastomer Compatibility - Recommended	(Swell <5%)		-	Nitrile (N674-70) Fluorosilicone Fluorocarbon Polyacrylate
Elastomer Compatibility - Marginal	(Swell <15%)		-	Nitrile (N497-70)
Elastomer Compatibility - Not Recommended	(Swell >15%)		-	Ethylene Propylene Buna N SBR

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.