

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.

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

U.S.	Approved MIL-PRF-87252C
British	–
French	–
Russian	–
NATO Code	S-1748
Joint Service Designation	–

PROPERTIES	MIL-PRF-87252C	TYPICAL
Relative Density at 15.6/15.6°C	–	0.799
Viscosity mm^2/s @ 100°C @ 40°C @ –40°C @ –54°C	1.65 min 5.0 min 300 max 1300 max	1.77 5.29 280 1094
Viscosity Index	–	145
Pourpoint °C	–	–73
Flash point °C	150 min	160
Fire point °C	160 min	171
Evaporation Loss at 204°C, 6.5 hr %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 @ 100°C @ 190°C	– – –	0.8058 0.7392 0.6768
Specific Heat $\text{cal/g}^\circ\text{C}$ @ –17.8°C @ 37.8°C @ 149°C @ 260°C	– – – –	0.49 0.54 0.63 0.72

Table continued

Table continued

PROPERTIES	MIL-PRF-87252C	TYPICAL
Thermal Conductivity, heat probe method, cal/hr cm ² (°C/cm)		
@ -17.8°C	—	1.26
@ 37.8°C	—	1.21
@ 149°C	—	1.12
@ 260°C	—	1.02
Coefficient of Thermal Expansion Dilatometer 1/°C		
0 to 50°C	—	0.00083
50 to 100°C	—	0.00092
100 to 150°C	—	0.00103
150 to 190°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 15µm	10000 max	2664
16 to 25µm	1000 max	345
26 to 50µm	150 max	86
51 to 100µm	20 max	10
< 100µm	5 max	0
Elastomer Compatibility Recommended (Swell <5%)	—	Nitrile (N674-70) Fluorosilicone Fluorocarbon Polyacrylate
Marginal (Swell <15%)	—	Nitrile (N497-70)
Not recommended (Swell >15%)	—	Ethylene Propylene Buna N SBR