

ANDEROL PRODUCT DATA SHEET

ROYCO® 602

COOLANT FOR AIRCRAFT AVIONICS SYSTEMS

GENERAL INFORMATION

ROYCO 602 is a synthetic based fluid composed of a highly branched, compact, and very stable synthetic hydrocarbon known as polyalphaolefin (PAO). Modern technology additives are provided to provide long-term storage stability. ROYCO 602 offers exceptional performance over a wide temperature range and does not react with water, resulting in cleaner operating systems and longer component life.

TYPICAL PROPERTIES:

PROPERTIES	TEST METHOD	PRODUCT NAME
Gravity, API	API	45.3
Specific Gravity, 15.6 °C	ASTM D1298	0.7999
Kinematic Viscosity@ 100 °C, cSt	ASTM D445	1.72
Kinematic Viscosity@ 40 °C, cSt	ASTM D445	5.19
Kinematic Viscosity@ -40 °C, cSt	ASTM D445	277
Kinematic Viscosity@ -54 °C, cSt	ASTM D445	1087
Viscosity Index	ASTM D2270	145
Pour Point, °F	ASTM D97	-100
Total Acid Number, mg KOH/g	ASTM D664	< 0.01
Flash Point, °C	ASTM D92	158
Fire Point, °C	ASTM D92	175
Evaporation, 400 °F, 6.5hr, %	ASTM D 972	17
Water Content, ppm	ASTM D1744	< 30
Density, gm/cc	Dilatometer	
@ 0 °C		0.8058
@ 100 °C		0.7392
@ 190 °C		0.6768
Specific Heat, Cp, cal/g-°C	ASTM D2766	
@ -17.8 °C		0.49
@ 37.8 °C		0.54
@ 149 °C		0.63
@ 260 °C		0.72
Thermal Conductivity, cal/hr/cm ² (°C/cm)		
@ -17.8 °C		1.26
@ 37.8 °C		1.21
@ 149 °C		1.12
@ 260 °C		1.02

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For more information please refer to the relevant Material Safety Data Sheet accompanying each product.

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TYPICAL PROPERTIES (CONTINUED):

PROPERTIES	TEST METHOD	PRODUCT NAME
Coefficient of Thermal Expansion, 1/°C	Dilatometer	
0-50 °C		0.00083
50-100 °C		0.00092
100-150 °C		0.00103
150-190 °C		0.00117
Dielectric Constant, 400 Hz		2.10
Power Factor, 400 Hz		< 0.0001
Dielectric Breakdown Voltage, KV	ASTM D877	50
Volume Resistivity, ohm-cm	ASTM D1169	2.9 X 10 ¹⁵
Particulates	Automated Counter	Pass

APPLICATIONS

ROYCO 602 is recommended for use as a dielectric cooling fluid for aircraft avionics systems, high-powered transmitter equipment and power supplies, as well as many ordnance systems. ROYCO 602 may also be considered for use in electronics cooling systems such as circulating computer coolant systems. Benefits include lower initial cost, longer fluid life, lower weight, and lower toxicity when compared to other types of avionic coolants. Since ROYCO 602 does not react with water, no specialized reclamation equipment is required and there may be less environmental impact potential in the event of a spill.

ELASTOMER COMPATABILITY

Recommended (< 5% swell)	Marginal (< 15% swell)	Not Recommended (> 15%)
Nitrile (N 674-70)	Nitrile (N 497-70)	Ethylene Propylene
Fluorosilicone		Buna N
Fluorocarbon (PTFE, Viton)		SBR
Polyacrylate		Polychloroprene

APPROVALS

ROYCO 602 is qualified to the current MIL-SPEC revision of MIL-PRF-87252C (USAF).

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