

XCELTHERM EIO TY: 1



700 Kingsland Drive
PO Box 1928
Batavia, IL 60510
Phone: (630) 232-7966
Fax: (630) 232-7968
www.Radcoind.com

MILITARY FLUIDS

ASTM D3487-09 FED SPEC# VV-I-530

XCELTHERM® ELECTRICAL INSULATING OIL, TYPE I

XCELTHERM® Electrical Insulating Oil (Type I) meets military standard specifications for electrical oil applications. XCELTHERM® EIO-I has high electrical resistance and is both thermally and oxidatively stable. XCELTHERM® EIO-I is intended for use in most common electrical insulating oil applications where normal oxidation resistance is required. It is compatible with other electrical insulating oils, including Shell Diala® A.

Qualification Number: Not Applicable

Qualification Date: Not Applicable

NATO CODE: Not Applicable

ISO 9001:2015 Certification Number: C2018-00035

National Stock Numbers Available From Radco

9160-00-685-0913 5 Gallon Pail
9160-00-685-0914 55 Gallon Drum

CHARACTERISTICS	Test Method	Limit	Typical Results
Physical:			
Aniline Point °C	ASTM-D611	63-84	70.4
Color	ASTM-1500	0.5 max	<0.5
Flash Point, Minimum °C	ASTM-D92	146	154

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Interfacial Tension (@25°C) MIN	ASTM-D971	40 dynes/cm	50 dynes/cm
Pour Point °C Maximum	ASTM-D97	-40°C	-61°C
Specific Gravity, 15/15°C, Max	ASTM-D1298	0.91	0.8850
Viscosity, max, cSt (SUS) at:			
100°C	ASTM-D455	3.0 max	2.3
40°C	ASTM-D455	11.0 max	9.6
0°C	ASTM-D455	76.0 max	67
Visual Examination	ASTM-D1524	Clear and Bright	PASS
Electrical:			
Dielectric Breakdown Voltage @ 60 HZ:			
Disk Electrodes, min kV	ASTM-D877	30	47
VDE Electrodes, min, kV 0.040-in (1.02-mm) gap	ASTM-D1816	28	42
0.080-in (2.03-mm) gap	ASTM-D1816	56	63
Dielectric breakdown voltage, impulse, conditions, @ 25°C, needle-to-sphere grounded, 1 inch (25.4mm) gap	ASTM-D3300	145 kV	274 kV



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Gassing Tendency, max, uL/min	ASTM-D2300	+30	+12
Power Factor, 60 HZ			
@ 25°C, %	ASTM-D924	0.05	0.009
@ 100°C, %	ASTM-D924	0.030	0.06
Chemical:			
Oxidation Stability @ 72 hrs:			
% sludge, max, by mass	ASTM-D2440	0.15 max	0.004
TAN, max, mg KOH/g	ASTM-D2440	0.5 max	0.02
Oxidation Stability @ 164 hrs:			
% sludge, max, by mass	ASTM-D2440	0.3	0.03
TAN, max, mg KOH/g	ASTM-D2440	0.6	0.04
Oxidation Stability (RBOT), min	ASTM-D2112	—	243
Oxidation Inhibitor content, max, % by mass	ASTM-D2668	0.08	0.05
Corrosive Sulfur	ASTM-D1275	Non-corrosive	Non-corrosive
Water, max, ppm	ASTM-D1533	35	15
Neutralization No, TAN, mg KOH/g	ASTM-D974	0.03	<0.01
PCB Content, ppm	ASTM-D4059	Not Detectable	Not Detectable

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Manufacturing Location: Batavia IL, 60510