



RADCO INDUSTRIES, INC.
TECHNICAL DATA SHEET FOR XCELTHERM ELECTRICAL INSULATING OIL, TYPE II
I/A/W FED SPEC# VV-I-530 ASTM D3487-09

Physical Characteristics	Requirement	Typical Results	Test Method
Aniline point, °C, min	63	76	ASTM D611
Color, max	0.5	L0.5	ASTM D1500
Flash point, min, °C	145	157	ASTM D92
Interfacial tension at 25°C, min, dynes/cm	40	49	ASTM D971
Pour point, max, °C	-40	-64	ASTM D97
Relative density (specific gravity), 15°C/15°C max	0.91	0.8860	ASTM D1298
Viscosity max, cSt at:			ASTM D445
100°C	3.0	2.4	
40°C	12.0	9.6	
0°C	76.0	65.4	
Visual examination	clear and bright	clear and bright	

Electrical Characteristics	Requirement	Typical Results	Test Method
Dielectric breakdown voltage at 60 Hz:			
Disk electrodes, min, kV	30	40	ASTM D877
VDE electrodes 0.080-in. (2.03-mm) gap, min, Kv	35	55	ASTM D1816
Dissipation factor (or power factor), at 60 Hz max, %:			ASTM D924
25°C	0.05%	0.01%	
100°C	0.30%	0.04%	

Chemical Characteristics	Requirement	Typical Results	Test Method
Oxidation stability (rotating bomb test), min, minutes	195	262	ASTM D2112
Oxidation inhibitor content, max, % by mass	0.30%	0.27%	Gas Chromatography
Corrosive sulfur	Noncorrosive	Noncorrosive	ASTM D1275
Water, max, ppm	35	8	ASTM D1533
Neutralization number, total acid number, max, mgKOH/g	0.03	0.01	ASTM D974
PCB content, ppm	Not detectable	Not detectable	ASTM D4059

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CHARACTERISTICS	TEST METHOD	REQUIREMENT	TYPICAL RESULTS
Kinematic Viscosity, centistokes at 0°C at 40°C at 100°C	ASTM D445	75 cSt, max. 12 cSt, max. 3.0 cSt, max.	65.4 9.6 2.4
Pour point	ASTM D97	-40 cSt, max.	-64
Color	ASTM D1500	0.5, max.	L0.5
Interfacial Tension	ASTM D971	40 dynes/cm, min.	49
Aniline point	ASTM D611	76°C, max.	75.4°C
Visual Exam	ASTM D1524	Clear and Bright	PASS
Flash point	ASTM D92	145°C, min.	157°C
Density at 15°C/15°C	ASTM D1298	0.91, max.	0.8863
Total Acid Number	ASTM D974	0.03 mgKOH/g, max	0.01
Water content	ASTM D1533	35 ppm, max.	8
Dielectric Strength	ASTM D877	30 kV, min.	40
VDE Electrodes (2.03mm gap)	ASTM D1816	35 kV, min.	55
Dissipation (Power) Factor at 25°C at 100°C	ASTM D924	0.05%, max. 0.3%, max.	0.01% 0.04%
Oxidation Stability (RBOT)	ASTM D2112	195 minutes, min.	262
Oxidation inhibitor content	ASTM D2668	0.3%, max.	0.27%
Corrosive sulfur	ASTM D1275	Non-corrosive	Non-corrosive
PCB Content	ASTM D4059	Non-detectable	Non-detectable
Density	ASTM D1298	Report	7.38 pounds/gallon
API Gravity	ASTM D1298	None	28.2

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