

# MIL-PRF-87252E

## RADCOLUBE® 500M

(Coolant Fluid, Hydrolytically Stable, Dielectric)

**RADCOLUBE® 500M** is a military-qualified dielectric/cooling fluid consisting of a synthetic hydrocarbon base oil and additives. Designed for safe use in land and airborne closed loop cooling systems, XCELTHERM® 500M demonstrates excellent heat transfer fluid properties, oxidative stability and dielectric characteristics in both military and commercial applications from - 54°C (-65°F) to 135°C (275°F).



**RADCO  
INDUSTRIES**

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## CHARACTERISTICS

	REQUIREMENT	RESULTS	TEST METHOD
Kinematic Viscosity, cSt mm <sup>2</sup> /s (cSt)			
Kinematic Viscosity, cSt mm <sup>2</sup> /s (cSt) 100 °C	1.65 min	1.68	ASTM D445
Kinematic Viscosity, cSt mm <sup>2</sup> /s (cSt) 40 °C	5.0 min	5.0	ASTM D445
Kinematic Viscosity, cSt mm <sup>2</sup> /s (cSt) -40 °C	300 max	261	ASTM D445
Kinematic Viscosity, cSt mm <sup>2</sup> /s (cSt) -54 °C			ASTM D2532
Kinematic Viscosity, cSt mm <sup>2</sup> /s (cSt) 1.5 hours, initial	1300 max	1,078	
Kinematic Viscosity, cSt mm <sup>2</sup> /s (cSt) 3.0 hours	1300 max	1,100	
Dielectric strength, kV	35 min	40	ASTM D877
Resistivity at 25 °C ohm-cm	1.0 x 10 <sup>10</sup> min	2.1 x 10 <sup>13</sup>	ASTM D1169
Flash Point, °C	150 min	172	ASTM D92
Fire Point, °C	160 min	178	ASTM D92
Acid number, mg KOH/g mg KOH/g	0.20 max	0.01	ASTM D664
Water, mg/kg (ppm)	50 max	26	ASTM D6304
Rubber swell, SAE AMS 3217/2 (NBR-L) percentage change in volume	0.0 - 10%	7.4%	ASTM D4289
Solid particle contamination			Paragraph 4.4.1

## QUALIFICATION

### NUMBER:

AFPET/PTPT 19-014

### QUALIFICATION DATE:

25 September 2019

### NATO CODE: S-1748

### ISO 9001:2015 Certification

Number: C2018-00035

## NATIONAL STOCK NUMBERS

AVAILABLE FROM RADCO

9150-01-306-2475	QUART
9150-01-336-7174	GALLON-OBLONG
9150-01-304-0885	GALLON-ROUND
9160-01-380-2175	GALLON-OBLONG
9150-01-306-2470	55 GALLON DRUM

## MANUFACTURING

### LOCATION:

La Fox, IL 60147

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Particle count per size range NAS 1638			FTM 3012
Particle count per size range NAS 1638, 5 TO 15	8000 max	417	
Particle count per size range NAS 1638, 6 TO 25	1425 max	27	
Particle count per size range NAS 1638, 26 TO 50	253 max	30	
Particle count per size range NAS 1638, 51 TO 100	45 max	0	
Particle count per size range NAS 1638, > 100	8 max	0	
AS4059 Contamination Class	5 max	2	
Storage stability	PASS	PASS	FTM 3465
High-temperature stability	PASS	PASS	Paragraph 4.4.3
Corrosiveness and oxidation stability			ASTM D4636
Change in acid number mg KOH/g	0.5 max	0.00	
Metal specimen weight change, mg/cm <sup>2</sup>			
Aluminum	± 0.2	-0.01	
Cadmium plated steel	± 0.2	0.00	
Copper (copper color)	± 0.4 (3a max.)	0.01 (3a)	
1010 Steel	± 0.2	0.01	
Magnesium	± 0.2	0.00	
Percent change in viscosity, at 40 °C	5% max	1.2%	
Seperation of insoluble materials or gumming of the fluid	NONE	NONE	
Compatibility	PASS	PASS	Paragraph 4.4.2