MIL-PRF-87257D
RADCOLUBE® FR257

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HYDRAULIC FLUID, FIRE RESISTANT, LOW TEMPERATURE, SYNTHETIC HYDROCARBON BASE, AIRCRAFT AND MISSILE

Synthetic, fire resistant hydraulic fluid consisting of synthetic hydrocarbon base oils and additives. Safe for use in low temperature aircraft.

NATO Code: H-538

Qualification Number: AFPET/PTPS 21-008
AFPET/PTPS 24-009

Qualification Date: 20 April 2021
22 July 2024

ISO 9001:2015 Certification No: C2024-00254

Shelf Life: 24 Months from DOM

Manufactured: LaFox, IL 60147 | Cage: 1RVC4

NATIONAL STOCK NUMBERS (NSN)	
9150-01-388-7769	Quart
9150-01-386-6687	Gallon
9150-01-391-2087	5 Gallon Pail
9150-01-387-4577	55 Gallon Drum

RADCO INDUSTRIES, INC.

CERTIFICATE OF TEST RESULTS FOR RADCOLUBE® FR257 FIRE RESISTANT HYDRAULIC FLUID

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Property	Requirement	Result	Test Method
Acid number, mg KOH/g	0.20 max	0.09	ASTM D664
Relative Density at 15.6°C/15.6°C	Report	0.842	ASTM D1298
Barium content, mg/kg	10 max	<1	ASTM D5185
Color	Section 3.2.1.4	Pass	ASTM D1500 and Paragraph 4.4.4
Compatibility	Section 3.3.2	Pass	Paragraph 4.4.1
Corrosiveness and oxidation stability (168 hours at 135°C ± 1°C			ASTM D4636
Change in acid number, mg KOHg	0.20 max	0.00	
Percent change in viscosity at 40°C	±10%	0.69%	
Metal specimen weight change, mg/cm^2			
1010 steel	±0.2 max	0.008	
Aluminum	±0.2 max	0.016	
Magnesium	±0.2 max	0.000	
Cadmium plated steel	±0.2 max	0.008	
Copper (ASTM D130 Discloroation Standard)	±0.6 (No. 3) max	0.016 (2a)	
Seperation of insoluble materials or gumming of the fluid	None	None	
Evaporation loss (6.5 hours at 135°C), weight percent	20% max	9%	ASTM D972
High temperature-high pressure spray ignition	Conform	Conforms	FED-STD-791 Method 6052
Flame propagation cm/sec	0.5 max	0.26	ASTM D5306
Flash point, °C	160 min	178	ASTM D92
Fire point, °C	170 min	190	ASTM D92
Foaming Characteristics at 24°C			ASTM D892
Foaming tendency, mL (volume at end of five minute blowing period)	65 max	50	
Foam stability, mL (volume at end of ten-minute settling period)	0 max	0	
Four-ball, use test condition A, scar diameter, mm			ASTM D4172
1 kg load	0.21 max	0.18	
10 kg load	0.30 max	0.25	
40 kg load	0.65 max	0.52	
High temperature stability			Paragraph 4.4.3
Percent change in viscosity at 40°C	±5% max	0.5%	
Change in acid number, mg KOHg	0.1 max	0.09	
Formation of precipitate or insoluble material	None	None	
Isothermal secant bulk modulus at 40 °C and 27.6 MPa (4000 psig), MPa (psi)	1379 Mpa (200,000 psi) min	1418 (205,664)	ASTM D6793
Low temperature stability, 72 hours at -54°C ± 1°C	Section 3.3.3	Conforms	FED-STD-791 Method 3458
Particulate contamination			
Particle count, AS4059 Contamination Class	Class 5 max	3	
Particle size range SAE AS4059 (ISO 11171), Differential, micrometers			FED-STD-791 Method 3012
5-15 (6-14$_{(c)}$)	8000 max	1151	
16-25 (15-21$_{(c)}$)	1425 max	62	
26-50 (22-38$_{(c)}$)	253 max	22	
51-100 (39-70$_{(c)}$)	45 max	8	
Over 100 (Over 70$_{(c)}$)	8 max	0	
Gravimetric analysis, mg/100 mL	1.0 max	0.2	ASTM D4898
Pour point, °C	-60 max	≤ -63	ASTM D97
Rubber swell, standard synthetic rubber, NBR-L, percent change in volume	19.0% to 30.0%	22.5%	ASTM D4289
Storage stability (after 12 months)	Section 3.3.5	Pass	FED-STD-791 Method 3465
Viscosity stability at -54°C mm^2/sec			ASTM D2532
3 hours	2500 max	2094	
72 hours	2500 max	2131	
Viscosity, mm^2/sec			ASTM D445
at -40°C	550 max	461	
at 40°C	6.7 min	6.8	
at 100°C	2.0 min	2.1	
Water, mg/kg	100 max	52	ASTM D6304
Workmanship	Conform	Conforms	ISO 9001:2015

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