

TABLE 1: Synthetic Jet and Diesel Fuel JS-1 Test Status

Spec	Test Property (Units)	JS-1	Range/Limit	ASTM Test Method
D	Sulfur (ppm)	4	15 max	D 5453
J	Appearance	Clear	Report	D 4176
J	Color (Saybolt)	30+	Report	D 156 or D 6045
J	Acidity, total (mg/KOH/g)	0.002	0.015 max	D 3242
J _m	Olefins (% vol)	0.0%	5 % max	D 1319
J	Aromatics, unsaturated (% vol)	0.3%	1% max	D 1319
J	*Aromatics, total (% vol)	0.91%	25% max	D 5186, D6379, or D 6591
J	Distillation Temperature IBP (°C)	154.0	Report	D 86 (D 2887 for est. only)
J	10% recovered (°C)	177.1	205 max (186)	D 86
J	20% recovered (°C)	188.2	Report	D 86
J	50% recovered (°C)	212.0	Report	D 86
J	90% recovered (°C)	263.8	Report	D 86
J	FBP End Point (°C)	289.8	300 max (330)	D 86
J _m	T50 – T10	34.9	15 min	D 86
J _m	T90 – T10	86.7	40 min	D 86
J	Residue (% vol)	1.3%	1.5% max	D 86
J	Loss (% vol)	0.5%	1.5% max	D 86
DJ	Flash point (°C)	52.5	52 min	D 93 or D 3828
J	Density, (kg/m ³ at 15°C)	.808	.775 - .840	D 4052
J	Density (lbs/gal at 15°C)	6.71	6.47 -7.01	D 4052
J	API gravity (at 60°F)	43.6	37-51	D 4052
J	Freezing point (°C)	-54.7	-47 max	D 2386, D 5972, or D 7153
J	Viscosity (at -20°C mm ² /s cSt)	6.1	8.0 max	D 445 or D 7042
J	Viscosity (at -40°C cSt)	10	12.0 max	D 445 or D 7042
D	Viscosity (at 40°C cSt)	1.5	2.4 max	D 445 or D 7042
J	Calculated Net Heat of combustion (MJ/kg)	43.5	42.8 min	D 3338
J	Actual Net Heat of combustion (MJ/kg)	43	42.8 min	D 4809
J _m	Hydrogen content (% mass)	14.5%	13.4% min	D 3701 or D 3343
D	Cetane Index	41	40 min	D 976 or D 4737 (Procedure A)
D	Cetane Number	53	51 min	D 613
J	Smoke point (mm)	30	19 min	D 1322
J	Naphthalenes (% vol)	0.002%	3.0% max	D 1840
J	Cu Strip Corrosion (2 hr at 100°C)	1a	1 max	D 130
J	JFTOT Pressure Change (mm Hg)	0	12 max	D 3241
J	Thermal Stability Rating (at 325°C)	1	3 max	D 3241
J	Existent Gum (mg/100mL)	<1	7 max	D 381
J	Particulate (mg/L)	0.08	1 max	D 2276 or D 5452
J _m	Filtration Time (minutes)	9	15	MIL-DTL-83133 Appendix B
J _m	Water Reaction Interface Rating	1	1 b	D 1094
J	Microseparometer (MSEP w additives)	80	70 min	D 3948 or D 7224
J _m	Icing Inhibitor FSII (DiEGME % vol)	<0%>	0.10-0.15%	D 5006
DJ _m	Conductivity (pS/m at 85°C max)	<0>	150-450	D 2624
J _m	Lubricity (mm, BOCLE – tested w/o CI/LI)	0.520	0.85 max	D 5001 (w CI/LI 0.490 est.)
D	Lubricity (micron, HFRR at 60°)	<510>	520 max	D 6079 (w/o CI/LI tested at 610)

<> TEST REQUIRES STANDARD ADDITIVES

Bold Numbers Still Under Evaluation - Green Confirmed By Testing – Regular Text Understood / Data Available

D: Controlling specification is D 975 for No. 1 & 2 Diesel; Cloud point is N/A due to low freeze point.

J: Controlling specification is D1655 & D 7566 for Jet A & A-1, Mercaptan Sulfur is N/A due to ultra low sulfur content.

J_m: Controlling specification is MIL-DTL-83133 for JP-8. <Include AO, MDA, FSII & CI/LI additives in conformity test>.

* O-ring swell verified by separate test.

