

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.

