

Q Grade Specifications
(Jet A Aviation Turbine Fuel)

Product Property ^{1/}	Method	Minimum	Maximum
<u>Composition:</u>			
Total Acidity, mg KOH/g	D3242		0.10
Aromatics, vol %	D1319, D8267, correlated D8305		25
	Or		
	D6379		26.5
Mercaptan Sulfur, wt % ^{2/}	D3227		0.003
Sulfur, ppm	D1266, D2622, D4294, D5453		3,000
<u>Volatility:</u>			
Distillation ^{6/}	D86, D2887		
10% Recovered, °F			396
50% Recovered, °F		Report	
90% Recovered, °F		Report	
Final Boiling Point, °F			562
Residue, vol %			1.5
Loss, vol %			1.5
Flash Point, °F	D56, D93	108	
Gravity, °API	D1298, D4052	37.5	50.5
<u>Fluidity:</u>			
Freezing Point, °F	D2386		-40
Viscosity at -20°C (-4°F), cSt	D445, D7945, correlated D7042		8.0
<u>Combustion:</u>			
Net Heat of Combustion, BTU/lb ^{3/}	D4809	18,400	
Smoke Point, mm	D1322	25.0	
	Or		
Smoke Point, mm	D1322	18.0	
	And		
Naphthalenes, vol %	D1840		3.0

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<u>Corrosion:</u>			
Copper strip, 2 Hr at 100°C (212°F)	D130		1
Thermal Stability ^{4/ 5/}	D3241		
Filter pressure drop, mm Hg			25
Heater tube deposit rating			
Annex A1 VTR, VTR Color Code			< 3
or			
Annex A2 ITR or Annex A3 ETR, nm average over area of 2.5 mm ²			85
<u>Contaminants:</u>			
Existent gum, mg/100 mL	D381		5
Micro-Separometer rating	D3948, 7224	85	
Particulate Matter, mg/L	D5452		Report
Color, Saybolt	D156	+16	
<u>Additives:</u> ^{7/}			
Electrical Conductivity, pSm	D2624		12

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Footnotes:

- 1/ Delivered products meet all applicable requirements at time and place of delivery.
- 2/ Mercaptan Sulfur determination is waived if the result of the Doctor Test ASTM D4952 is negative.
- 3/ Equation 2 in D3338 may be used as an alternate method.
- 4/ ASTM D3241 Thermal Stability test must be conducted at 275 °C for 2.5 hours at origin. Peacock or abnormal color deposits result in a failure and are not accepted.
- 5/ ASTM D3241 Thermal Stability test results for deliveries will be generated at a minimum test temperature of 260 °C
- 6/ ASTM D2887 Simulated Distillation results must be reported after D86 correlation.
- 7/ Additives:
 - Antioxidants: Shipments may, but are not required to, contain a maximum of 8.4 pounds per 1,000 barrels (not including weight of solvent) of the following anti-oxidants:
 - N, N-diisopropylparaphenylene diamine.
 - 75% (min) of 2, 6-ditertiary-butyl phenol plus 25% (max) of tertiary and tritertiary butyl phenols.
 - 72% (min) 2, 4-dimethyl-6-tertiary-butyl phenol plus 28% (max) of monomethyl and dimethyl tertiary-butyl phenols.
 - 55% (min) 2, 4-dimethyl-6-tertiary-butyl phenol plus 45% (max) of mixed tertiary and ditertiary butyl phenols.
 - Metal Deactivators: Shipments may, but are not required to, contain the following metal deactivators at a maximum of 2.0 mg/L (not including weight of solvent):
 - n, N-disalicylidene-1, 2-propane
diamine.
 - Other additives: are prohibited.



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Notes:

- The Carrier shall not be responsible for the concentration of additives in jet fuel deliveries at terminals.
- In accordance with 40 CFR § 1090.1015(a) this fuel is designated as Jet fuel and may not be redesignated as ULSD without recertification.
- In accordance with 40 CFR § 1090.615 this fuel is for aviation use only.
- In accordance with 40 CFR § 80.1453, This volume of neat or blended renewable fuel is designated and intended to be used as transportation fuel, heating oil, or jet fuel in the 48 U.S. contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR § 80.1430.