

SPECIFICATION FOR AVIATION TURBINE FUEL (Jet A1)

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Sl.No.	PARAMETER	SPECIFICATION	STD.METHOD	Typical Quality
1	APPEARANCE			
1.1	Visual Appearance	Clear & Bright, free from Solid matter & undissolved water at ambient temperature.		Clear & Bright
1.2	Colour	Report	ASTM D 156 Or ASTM D 6045	25
1.3	Particulate Contamination , at point of manufacture, mg/l	1.0 Max	IP 423 / ASTM D 5452	0.80
1.4	Particulate , at point of manufacture			
1.4.1	≥ 4 μm(c)	Report	IP 564 or IP 565	2500
1.4.2	≥ 6 μm(c)	Report		950
1.4.3	≥ 14 μm(c)	Report		99
1.4.4	≥ 21 μm(c)	Report		22
1.4.5	≥ 25 μm(c)	Report		15
1.4.6	≥ 30 μm(c)	Report		10
2	COMPOSITION	-	-	
2.1	Total Acidity, mg KOH/ gm	0.015 Max.	ASTM D 3242	0.009
2.2	AROMATIC HYDROCARBON TYPES			
2.2.1	Aromatics % v/v,	25 Max.	IP 156 /ASTM D 1319	18.5
	or			
2.2.2	Total Aromatics, %v/v	26.5 Max	IP 436 /ASTM D 6379	18.5
2.3	Sulphur, Total % m/m,	0.3 Max.	ASTM D 4294	0.25
	Sulphur Mercaptan % m/m,	0.003 Max.	ASTM D 3227	0.0020
2.4				
Or	Doctor Test	Doctor Negative	IP 30	
2.5	REFINING COMPONENT, AT THE			
2.6	POINT OF MANUFACTURE .			
2.6.1	1. Hydro processed component, % v/v	Report		-
2.6.2	2. Severely Hydro processed component, % v/v	Report		35

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3	VOLATILITY	-	-	
3.1	Distillation - IBP deg. C,	-	ASTM D 86	155
	Fuel recovered 10% by volume at °C	205 Max.	-	171
	Fuel recovered 50% by volume at °C	Report		195
	Fuel recovered 90% by volume at °C	Report		233
	Final Boiling Point °C,	300 Max.	-	254
	Residue % volume ,	1.5 Max.	-	1.0
	Loss% volume,	1.5 Max.	-	1.0
3.2	Flash Point deg. C.	38 Min.	IP 170	42
3.3	Density @ 15 Deg.C kg/m3	Min 775.0 Max 840.0	IP 365/ ASTM D 4052	799
4	FLUIDITY	-	-	-
4.1	Freezing point , °C,	Minus 47 Max.	IP 16/ ASTM D 2386	Minus 52
4.2	Kin. Viscosity at minus 20°C, mm ^{2/s}	8.00 Max.	IP 71/ASTM D 445	4.10
5	COMBUSTION			
5.1	Smoke point, mm OR	25 Min.	ASTM D 1322/IP 57	
	Smoke Point	19 Min	ASTM D 1322/IP 57	24
-	And Naphthalene, % vol.	3 Max.	ASTM 1840	2.3
5.2	Specific energy MJ/kg, Min	42.8	Annex C	43.27
6	CORROSION			
6.1	Cu strip for 2 hrs @ 100 deg. C	Not worse than No:1	ASTM D 130	No.1
7	THERMAL STABILITY, JFTOT			
7.1	Thermal Stability-JFTOT		IP 323 / ASTM D 3241	
7.1	Test Temperature, °C	Min 260		
7.2	Tube Rating, visual	Less than 3 [No peacock) or Abnormal Colour Deposit		Zero, No peacock
7.3	Pressure Difference, mmHg	25 Max.		

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8	CONTAMINANTS	-		
8.1.1	Existent gum, mg/100ml	7 Max.	IP 131 / ASTM D 381	2.1
	or			
8.1.2	Existent gum with Air , mg/100ml	7 Max.	IP 131 / ASTM D 381	2.1
9	WATER REACTION CHARACTERISTICS	1b Max.	ASTM D 1094 {Method A}	1b
9.1	Micro Separator rating at point of Manufacture		ASTM D 3948	95
9.1.1	MSEP without SDA OR	85 Min.		
9.1.2	MSEP without SDA	70 Min		90
10	CONDUCTIVITY:			
10.1	Electrical Conductivity PS/m	50 Min 600 Max	IP 274/ ASTM D 2624	75 @ 30°C
11	LUBRICITY			
	Wear Scar Diameter, mm	0.85 max	ASTM D 5001	0.63

* Please refer Defence Standard 91-91 issue 6 with Amendment 1 for further details.