AVIATION TURBINE FUEL

TEST	METHOD	SPECIFICATION
Density @ 15°C, kg/m^3	IS 1448 P :16	775.0 to 840.0
Colour(2)	ASTM D156/D6045	Report
Appearance(1)	Visual	Clear
Particulate Contamination, mg/l	ASTM D5452/IP 423	Max. 1.0
Water Reaction :	IS 1448 P :42	
Interface rating		Max. 1b
Mercaptan Sulphur, %w	IS 1448 P :109 / ASTM D:3227	Max. 0.0020
Copper Strip Corrosion(2 hr@ 100°C)	IS 1448 P :15	Max. No.1 strip
Sulphur, Total, %w	ASTM D:4294 / IS 1448 P :34	Max. 0.30
Flash Point (Abel), °C	IS 1448 P :20	Min. 38
Viscosity (Kinematic), @ -20°C, mm^2/S	IS 1448 P :25	Max. 8.000
Freezing Point, °C	IS 1448 P :11	Max. -47
Total Acidity, mg KOH/g	IS 1448 P :113	Max. 0.015
Aromatics, %v	IS 1448 P :23	Max. 22
Smoke Point, mm	IS 1448 P :31 / ISO 3014	Min. 19
Naphthalene content, %v	IS 1448 P :118	Max. 3.0

Specific Energy, MJ/Kg	ASTM D : 3338 / P:6	Min. 42.8
Existent Gum (with air jet), mg/100 ml	IS 1448 P :29	Max. 7
Distillation : [5]	IS 1448 P :18	
IBP, °C		To be reported
10% v recovered @, °C		Max. 205
50% v recovered @, °C		To be reported
90% v recovered @, °C		To be reported
FBP, °C		Max 300
Residue, %v		Max. 1.5
Loss, %v		Max. 1.5
Water Separation Index Modified (WSIM)[6]	IS 1448 P :142	Min. 70
Thermal Stability (JFTOT):	IS 1448 P :97 / ISO 6294	
Filter Pressure Differential, mm Hg		Max. 25.0
Tube Rating, Visual		Less than 3, no `Peacock' or Abnormal Colour Deposits
Anti-Oxidant (Active Ingredient), mg/litre [8]	-	17.0 to 24.0
Metal Deactivator (Active Ingredient), mg/litre [9]	-	Max. 2.0
Anti-Static Additive Stadis 450, mg/litre[10]	-	Max. 3
Electrical Conductivity of Doped Fuel, pico-siemens/meter	ASTM D 2624 / ISO 6297	50 to 600
Lubricity, mm	ASTM D 5001	Max. 0.85 #
CONFORMS TO BIS SPEC IS:1571-2008 and DEFSTAN 91-91/ISSUE 6		
# The requirement to determine lubricity as per IS 1571-2008 applies only to ATF containing more than 95 % hydroprocessed material where atleast 20 % of this is severly hydro processed.		
Defence requirement to be met at 0.65 mm, Max. To meet this requirement, approved Lubricity Additive as mentioned in 3.2.4 of IS:1571, 2008 to be added by appropriate agency before being inducted into the aircraft.		

Note :

1) Clear, bright and free from solid matter and visually undissolved water at normal ambient temperature.
2) Requirement to report Saybolt colour shall apply at point of manufacture. Unusual or a typical colours should also be noted. Refer Annexure B of IS 1571-2008.
3) A Condenser bath temperature of 0 to 4°C shall be used.
4) If anti-static additive is not present in the fuel, the WSIM shall be 85 min.
5) ANTI - OXIDANTS

Min. 17.0 mg/litre of anti-oxidant shall be added to the product intended for blending with `hydrogen treated' fuels. For fuel (or fuel component) which has not been hydrogen treated, such addition is optional.

The following anti-oxidants are approved :

a) 2,6 - ditertiary-butyl-phenol
b) 2,6 - ditertiary-butyl-4-methyl-phenol
c) 2,4 - dimethyl-6-tertiary-butyl-phenol
d) 75 percent min. 2,6 - ditertiary-butyl-phenol
   25 percent max. tertiary and tritertiary-butyl-phenols
e) 55 percent min,2,4 - dimethyl-6-tertiary-butyl-phenols
   15 percent, 4 - methyl-2, 6 - ditertiary-butyl-phenol
   With the remainder, 30 percent max., a mixture of monomethyl and dimethyl-tertiary-butyl-phenols.
   The amount and nature of the anti-oxidan(s) so added, shall be stated on the quality certificates.
f) A mixture of 72% minimum,2,4 dimethyl-6-tertiary-butyl phenol 28% minimum, mixture of tertiary-butyl-methyl phenols and tertiary-butyl-dimethyl phenols.

6) METAL DEACTIVATOR

The following metal deactivator is approved :
N,N - disalicylidene, 1,2 - propanediamine
The amount of the metal deactivator may be added not exceeding 2.0mg/l in initial batching, shall be stated on the quality certificates.

7) STATIC DISSIPATOR ADDITIVE (SDA)

One of the qualified SDA is as follows :
Stadis 450 Max. 3 mg/lt