



energising life

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



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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.



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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/lit