

High Speed Diesel / Gas Oil
Indian Oil Diesel meets the requirements of
IS 1460: 2005 (5th Revision)

Sl. No.	Characteristics	Requirements		Method of Test
		BS II	BS III	
(i)	Acidity, inorganic	Nil	Nil	P:2
(ii)	Acidity, total mg of KOH/g, Max	To Report	To Report	P:2
(iii)	Ash, percent by mass, Max	0.01	0.01	P:4 / ISO 6245
(iv)	Carbon residue (Ramsbottom) on 10 percent residue ⁽¹⁾ percent by mass, Max	0.30	0.30	P:8 / ISO 10370
(v)	Cetane number ⁽²⁾ , Min	48 ⁽³⁾	51 ⁽³⁾	P:9 / ISO 5165
(vi)	Cetane index ⁽²⁾ , Min	46 ⁽³⁾	46 ⁽³⁾	D 4737 / ISO 4264
(vii)	Pour points ⁽⁴⁾ Max a) Winter b) Summer	3°C 15°C	3°C 15°C	P:10 / D 5949 or D 5950 or D 5985
(viii)	Copper strip corrosion for 3hr at 100°C	Not worse than No. 1	Not worse than No. 1	P:15 / ISO 2160
(ix)	Distillation, percent (v/v) recovered			P:18 / ISO 3405
	a) at 350°C	85	-	
	b) at 360°C	-	95	
	c) at 370°C	95	-	
(x)	Flash point			
	a) Abel °C, Min	35	35	P:20
	b) Pensky Martens closed cup ⁽⁵⁾ °C, Min	66	66	P:21
(xi)	Kinematic viscosity, cSt, at 40°C	2.0 to 5.0	2.0 to 5.0	P:25 / ISO 3104
(xii)	Sediments, percent by mass, Max	0.05	-	P:30
(xiii)	Total Contamination, mg/kg	24	24	EN 12662
(xiv)	Density at 15°C ⁽⁶⁾ , kg/ m ³	820-860	820-845	P:16 or P:32 ⁽¹⁾ / D 4052 / ISO 3675 or ISO 12185
(xv)	Total sulphur ⁽⁸⁾ , mg/kg, Max	500	350	IP 336 or 4294. ⁽⁹⁾ ISO 14596 or ISO 8754/ P:83 / D 2785 / D 5433 / D 2622 / D 3120
(xvi)	Water content, percent(v/v) Water content, mg/kg, Max	0.05 -	- 200	P:40 / ISO 3733 / ISO 6296 /ISO 12937
(xvii)	Cold Filter Plugging point (CFPP) ⁽⁴⁾ Max a) Winter b) Summer	6°C 18°C	6°C 18°C	P:110 / D 6371
(xviii)	Total sediments ⁽¹⁰⁾ mg per 100 ml, Max	1.5	-	Annex A / ISO 11205 / D 2274 ⁽¹⁰⁾
(xix)	Oxidation Stability, g/m ³ , Max	-	25	ISO 12205 or D 2274
(xx)	Polycyclic Aromatic Hydrocarbon (PAH) percent by mass, Max	-	11	IP 391 or EN 1296
(xxi)	Lubricity corrected wear scar diameter (WSD 1.4) at 60°C, microns, Max	460	460	ISO 12156-1
(xxii)	Oxygen content ⁽¹¹⁾ percent by mass, Max	0.6	0.6	Annex B

NOTES

- 1 This limit is applicable prior to addition of ignition improvers, if used. In case a value exceeding the limit is obtained on finished fuels in the market, ASTM D 4046 / ISO 13759 shall be used to establish the presence of nitrate containing compound. In such case the present limit for carbon residue cannot be applied. However, the use of ignition improver does not exempt the manufacturer from meeting this requirement prior to the addition of additives.
- 2 Fuel meant for vehicles meeting Bharat Stage II emission norms is required to meet either of these two parameters.
- 3 For fuel processed from Assam crude, cetane number and cetane index is relaxed by 3 units.
- 4 Winter shall be the period from November to February in central and northern plains of India (both months inclusive) and rest of the months of the year shall be called as summer.
- 5 Applicable for Naval applications and fishing vessels requiring high flash HSD.
- 6 For fuel processed from Assam crude, the density range is relaxed to 820-870 and 820-850 for Bharat Stage II and Bharat Stage III grades respectively.
- 7 In case of dispute P:32 shall be the referee test method.
- 8 For HSD supplied to Indian Navy, the limit of sulphur shall be in agreement between the buyer and the supplier.
- 9 In case of dispute, ASTM D 4294 shall be the referee test method.
- 10 This test shall be carried out only at the refinery or manufacturer's end. As an alternative, the test method given in Annex A can also be used with a limit of 1.6 mg/100 ml. In case of dispute, ASTM D 2274 shall be referee method.
- 11 Shall be applicable only for HSD blended with 5 percent (v/v) Bio-diesel and the limit shall proportionately vary as and when the different blending percent of bio-diesel is permitted.

Last Updated on September 26, 2007