

INDUSTRY QUALITY CONTROL MANUAL

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INDIAN STANDARD AUTOMOTIVE DIESEL FUEL - SPECIFICATION IS: 1460—2005 (Fifth Revision), Amendment No. 2, March-2010.

Sr. No.	Characteristics	Bharat Stage IV	Test Method- [P:] of IS 1448/ISO/ASTM
i	Acidity, Inorganic	Nil	P : 2
ii	Acidity, Total, mg of KOH/g, Max.	To Report	P : 2
iii	Ash, % by Mass, Max.	0.01	P : 4 / ISO 6245
iv	Carbon Residue (Ramsbottom) on 10 percent residue ¹⁾ , Percent by mass, Max.	0.30	P : 8 / ISO 10370
v	Cetane Number, Min	51 ²⁾	P : 9 / ISO 5165
vi	Cetane Index, Min.	46 ²⁾	D 4737 / ISO 4264
vii	Pour Point, ³⁾ °C, Max	.	.
a	winter	3°C	P : 10 / D 5949 or D 5950 or D 5985
b	summer	15°C	
viii	Copper Strip Corrosion for 3 hrs @ 50 °C	Not worse than No.1	P : 15 / ISO 2160
ix	Distillation, percent (v/v), recovered:		P : 18 / ISO 3405
	at 360°C, Min	95	
x	Flash Point :		
a	Abel , °C , Min.	35	P : 20
b	Pensky Martens Closed Cup ⁴⁾ , °C, Min.	66	P : 21
xi	Kinematic Viscosity, cSt at 40 °C	2.0 to 4.5	P : 25 / ISO 3104
xii	Total contamination, mg/ kg, Max	24	EN 12662
xiii	Density @ 15 °C ⁵⁾ , Kg/m ³	820 - 845	P : 16 or P : 32 ⁶⁾ / D 4052 / ISO 3675 or ISO 12185
xiv	Total Sulphur ⁷⁾ , mg/kg, Max	50	ISO 20846 or ISO 20847 or ISO 20884 / P 83 / D 5453 / D 2622 / D 4294 / P 34 ⁸⁾
xv	Water Content, mg / kg, max.	200	ISO 12937
xvi	Cold Filter Plugging Point, (CFPP) ³⁾ , Max		P : 110 / D 6371
a	winter	6 °C	
b	summer	18 °C	
xvii	Oxidation Stability ⁹⁾ , g/m ³ , Max.	25	ISO 12205 or ASTM D 2274 ⁹⁾
xviii	Polycyclic Aromatic Hydrocarbon (PAH), percent by mass, Max.	11	IP 391 or EN 12916
xix	Lubricity corrected Wear Scar Diameter (WSD 1.4) at 60°C, micron, Max.	460	ISO 12156 – 1 / Cor 1
xx	Oxygen content ¹⁰⁾ percent by mass, Max.	0.6	Annex B

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- 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 Improvers does not exempt the manufacturer from meeting this requirement prior to the addition of additives.
- 2) For fuel processed from Assam crude, Cetane number and Cetane index is relaxed by 3 units.
- 3) 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.
- 4) Applicable for Naval applications and fishing vessels requiring high flash HSD.
- 5) For fuel processed from Assam crude, the density range is relaxed to 820-855.
- 6) In case of dispute IS 1448 (P: 32) shall be the referee test method.
- 7) For HSD supplied to Indian Navy, the limit of sulphur shall be in agreement between the buyer and the supplier.
- 8) In case of dispute, ASTM D 4294 shall be the referee test method.
- 9) This test shall be carried out only at Refinery or manufacturer's end. In case of disputes, ASTM D 2274 shall be the referee method.
- 10) Shall be applicable only for Automotive Diesel Fuel blended with 5% (v/v) Bio-diesel conforming to IS 15607 and the limit shall proportionately vary as and when the different blending percent of bio-diesel is permitted.
- 11) All the test methods referred to in this standard include a precision statement. Interpretation of results based on test method/precision shall be used whenever applicable. In case of dispute procedure described in ISO 4259 shall be used.

Note: Refer latest version of BIS specification for complete details.