

भारतीय मानक
Indian Standard

IS 1593 : 2018

(तीसरा पुनरीक्षण)

Fuel Oils — Specification
(*Third Revision*)

ICS 75.160.20

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4 REQUIREMENTS

4.1 General

The material shall be hydrocarbon oils derived from petroleum or shale. This, however, shall not preclude the incorporation of small amounts of additives of hydrocarbon or non-hydrocarbon origin-intended to improve ignition, combustion or other characteristics.

4.1.1 The material shall be free from grit and other foreign impurities.

4.2 Pour Point

The requirement for the pour point of the material, when tested according to latest IS 1448 [P: 10], shall be as agreed to between the purchaser and the supplier.

4.3 Asphaltene Content

The requirement for the asphaltene content of the material, when tested according to latest IS 1448 [P :22] / ASTM D 6560 / IP 143, shall be as agreed to between the purchaser and the supplier.

4.4 TOTAL SEDIMENT

The requirement for the total sediment content of the material, when tested according to latest ISO 10307

(Section 1 and 2) / ASTM D 4870, shall be as agreed to between the purchaser and the supplier.

4.5 Spot Test

The requirement for the spot test of the material, when tested according to latest ASTM D 4740, shall be as agreed to between the purchaser and the supplier.

4.6 The material shall also comply with the requirements prescribed in Table 1, when tested according to the appropriate methods, as given in col 7 of Table 1.

5 PACKING AND MARKING

5.1 Packing

The material shall be packed in suitable containers as agreed to between the purchaser and the supplier, and subject to the provisions. *Red Tariff No. 18 rules and rates for the conveyance by rail of explosive and other dangerous goods*, issued by the Indian Railways Conference Association, with any alternations made thereafter.

5.2 Marking

5.2.1 The material shall be supplied in accordance with the marking and delivery instructions given by the purchaser.

Table 1 Requirements for Fuel Oils
(Clause 4.6)

Sl No	Characteristic	Requirement				Method of Test, Ref to [P:] of IS1448/ISO/ASTM/IP)
		Grade LV	Grade MV1	Grade MV2	Grade HV	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Acidity, inorganic	Nil	Nil	Nil	Nil	ASTM D974 ³⁾ /IP 139
ii)	Ash, percent by mass, <i>Max</i>	0.1	0.1	0.1	0.1	[P : 4]
iii)	Carbon residue, mass percent, <i>Max</i>	14	16	18	20	[P : 122]/ISO 10370 ³⁾
iv)	Gross, calorific value	Not limited, but to be reported ¹⁾				[P : 6] ³⁾ / [P : 7]
v)	Density at 15°C kg/m ³ or Relative density at 15.6/15.6°C	Not limited, but to be reported				[P : 16] or [P : 32]
vi)	Flash point (Pensky Martens (closed), °C, <i>Min</i>)	66	66	66	66	[P : 21]
vii)	Kinematic viscosity in centistokes at 50°C	80 (<i>Max</i>)	80 - 125	125 -180	180- 380	[P : 25]/ISO 3104
viii)	Sediment, percent by mass, <i>Max</i>	0.25	0.25	0.25	0.25	[P : 30]
ix)	Sulphur, total, percent by mass, <i>Max</i> ²⁾	3.5	4.0	4.0	4.5	[P : 33]/ISO 8754 ³⁾
x)	Water content, percent by volume, <i>Max</i>	1.0	1.0	1.0	1.0	[P : 40]/ISO 3733

NOTES

1 Normally the gross calorific value is of the order of 10 000cal/g.

2 Recognizing the necessity for low-sulphur fuel oils in some specialized user, a lower limit may be specified by mutual agreement between the purchaser and the supplier.

3 In case of dispute, this method shall be referee method

4 All the test method referred to in this standard method include a precision statement. The interpretation of results based on test method precision shall be used whenever applicable. In case of dispute the procedure described in ISO 4259 shall be used.