

BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY

*(Not to be reproduced without permission of BIS
or used as an Indian Standard)*

भारतीय मानक मसौदा

पेट्रोलियम उत्पाद – ईंधन (वर्ग एफ) –
समुद्री ईंधन की विशिष्टि

(IS 16731 का पहला पुनरीक्षण)

Draft Indian Standard

**PETROLEUM PRODUCTS — FUELS (CLASS F) —
SPECIFICATION OF MARINE FUELS**

(First Revision of IS 16731)

(ICS No. 75.160.20)

Petroleum and their related products of synthetic
or biological or natural origin Sectional Committee,
PCD 03

Last date for receipt of comment is
8 March 2025

NATIONAL FOREWORD

(Formal clauses will be added later)

This standard was originally published in 2019, which was based on ISO 8217 : 2017 'Petroleum products — Fuels (class F) — Specifications of marine fuels'. This (*first*) revision has been undertaken to align it with the latest version of ISO 8217 : 2024.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 2719 Determination of flash point — Pensky-Martens closed cup method	IS 1448 (Part 21) : 2019 / ISO 2719 : 2016 Methods of test for petroleum and its products: Part 21 Determination of flash point — Pensky-Martens closed cup method (<i>fourth revision</i>)	Identical
ISO 3015, Petroleum and related products from natural or synthetic sources — Determination of cloud point	IS 1448 (Part 10/Sec 1) : 2021 / ISO 3015 : 2019 Methods of test for petroleum and its products: Part 10 Petroleum and related products from natural or synthetic sources Section 1 Determination of cloud point (<i>third revision</i>)	Identical
ISO 3016 Petroleum and related products from natural or synthetic sources — Determination of pour point	IS 1448 (Part 10/Sec 2) : 2021 / ISO 3016 : 2019 Methods of test for petroleum and its products: Part 10 Petroleum and related products from natural or synthetic sources Section 2 Determination of pour point (<i>third revision</i>)	Identical
ISO 3104 Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity	IS 1448 (Part 25/Sec 1) : 2018 / ISO 3104 : 1994 Methods of test for petroleum and its products: Part 25 Transparent and opaque liquids Section 1 Determination of kinematic viscosity and calculation of dynamic viscosity (<i>second revision</i>)	Identical
ISO 3675 Crude petroleum and liquid petroleum products — Laboratory	IS 1448 (Part 16) : 2014 / ISO 3675 : 1998 Methods of test for petroleum and its products: Part 16 Crude petroleum and liquid	Identical

determination of density — Hydrometer method	petroleum products — Laboratory determination of density — Hydrometer method (<i>fourth revision</i>)	
ISO 3733 Petroleum products and bituminous materials — Determination of water — Distillation method	IS 1448 (Part 40) : 2015/ ISO 3733 : 1999 Methods of test for petroleum and its products: Part 40 Petroleum products and bituminous materials — Determination of water — Distillation method (<i>fourth revision</i>)	Identical
ISO 4259-2 Petroleum and related products — Precision of measurement methods and results — Part 2: Interpretation and application of precision data in relation to methods of test	IS 17315 (Part 2) : 2019 / ISO 4259-2 : 2017 Petroleum and related products — Precision of measurement methods and results : Part 2 Interpretation and application of precision data in relation to methods of test	Identical
ISO 4264 Petroleum products — Calculation of cetane index of middle-distillate fuels by the four variable equation	IS 1448 (Part 174) : 2020/ ISO 4264 : 2018 Methods of test for petroleum and its products: Part 174 Petroleum products — Calculation of cetane index of middle-distillate fuels by the four variable equation	Identical
ISO 5165 Petroleum products — Determination of the ignition quality of diesel fuels — Cetane engine method	IS 1448 (Part 9) : 2023/ ISO 5165 : 2020 Petroleum and its products — Methods of test : Part 9 Determination of the Ignition Quality of Diesel Fuels — Cetane Engine Method (<i>third revision</i>)	Identical
ISO 6245 Petroleum products — Determination of ash	IS 1448 (Part 4/Sec 1) : 2021 Methods of Test for Petroleum and its Products - Part 4/Section 1 Determination of Ash	Modified
ISO 8754 Petroleum products — Determination of sulfur content — Energy-dispersive X-ray fluorescence spectrometry	PCD 01 (23725) Petroleum and its Products - Methods of Test: Part 199 Determination of Sulfur Content Energy Dispersive X Ray Fluorescence Spectrometry	Identical
ISO 10370 Petroleum products — Determination	IS 1448 (Part 189) : 2021 / ISO 10370 : 2014 Petroleum Products	Identical

of carbon residue — Micro method	- Determination of Carbon Residue - Micro Method	
ISO 12156-1 Diesel fuel — Assessment of lubricity using the high-frequency reciprocating rig (HFRR) — Part 1: Test method	IS 1448 (Part 149) : 2020/ ISO 12156-1 : 2018 Methods of test for petroleum and its products : Part 149 Diesel fuel — Assessment of lubricity using the high-frequency reciprocating rig (HFRR) — Test method (<i>second revision</i>)	Identical
ISO 12185 Crude petroleum and petroleum products — Determination of density — Oscillating U-tube method	IS 1448 (Part 167) : 2018 / ISO 12185 : 1996 Methods of test for petroleum and its products : Part 167 Determination of density - Oscillating U - Tube method	Identical
ISO 12205 Petroleum products — Determination of the oxidation stability of middle-distillate fuels	IS 1448 (Part 154) : 2012/ ISO 12205 : 1995 Methods of test for petroleum and its products : Part 154 Determination of the oxidation stability of middle distillate fuels	Identical
ISO 12937 Petroleum products — Determination of water — Coulometric Karl Fischer titration method	IS 1448 (Part 182) : 2020/ ISO 12937 : 2000 Methods of test for petroleum and its products : Part 182 Petroleum products — Determination of water — Coulometric Karl Fischer titration method	Identical
ISO 14596 Petroleum products — Determination of sulfur content — Wavelength-dispersive X-ray fluorescence spectrometry	IS 1448 (Part 179) : 2020/ ISO 14596 : 2007 Methods of test for petroleum and its products : Part 179 Petroleum products — Determination of sulfur content — Wavelength-dispersive X-ray fluorescence spectrometry	Identical

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard:

<i>International Standard/ Other Publication</i>	<i>Title</i>
ISO 10307-1	Petroleum products — Total sediment in residual fuel oils — Part 1: Determination by hot filtration

ISO 10307-2	Petroleum products — Total sediment in residual fuel oils — Part 2: Determination using standard procedures for ageing
ISO 10478	Petroleum products — Determination of aluminium and silicon in fuel oils — Inductively coupled
ISO 14597	Petroleum products — Determination of vanadium and nickel content — Wavelength-dispersive
EN 116	Diesel and domestic heating fuels — Determination of cold filter plugging point — Stepwise cooling bath method
EN 14077	Petroleum products— Determination of organic halogen content —Oxidative microcoulometric method
EN 14078	Liquid petroleum products — Determination of fatty methyl ester (FAME) content in middle distillates — Infrared spectrometry method
EN 14214	Liquid petroleum products — Fatty acid methyl esters (FAME) for use in diesel engines and heating applications — Requirements and test methods
EN 15195	Liquid petroleum products — Determination of ignition delay and derived cetane number (DCN) of middle distillate fuels by combustion in a constant volume chamber
EN 15751	Automotive fuels — Fatty acid methyl ester (FAME) fuel and blends with diesel fuel — Determination of oxidation stability by accelerated oxidation method
EN 15940	Automotive fuels — Paraffinic diesel fuel from synthesis or hydro treatment — Requirements and test methods
EN 16329	Diesel and domestic heating fuels — Determination of cold filter plugging point — Linear cooling bath method
EN 16715	Liquid petroleum products — Determination of ignition delay and derived cetane number (DCN) of middle distillate fuels — Ignition delay and combustion delay determination using a constant volume combustion chamber with direct fuel injection
EN 17155	Liquid petroleum products — Determination of indicated cetane number (ICN) of middle distillate fuels — Primary reference fuels calibration method using a constant volume combustion chamber
ASTM D240	Standard Test Method for Heat of combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter
ASTM D664	Standard Test Method for Acid Number of Petroleum Products by Potentiometric Titration
ASTM D2622	Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry

ASTM D4294	Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy Dispersive X-ray Fluorescence Spectrometry
ASTM D6751	Standard Specification for Biodiesel Fuel Blend Stock (B100) for middle Distillate fuels
ASTM D6890	Determination of Ignition Delay and Derived Cetane Number (DCN) of Diesel Fuel Oils by Combustion in a Constant Volume Chamber
ASTM D7371	Standard Test Method for Determination of Biodiesel (Fatty Acid Methyl Esters) Content in Diesel Fuel Oil Using Mid Infrared Spectroscopy (FTIR-ATR-PLS Method)
ASTM D7668	Standard Test Method for Determination of Derived Cetane Number (DCN) of Diesel Fuel Oils— Ignition Delay and Combustion Delay Using a Constant Volume Combustion Chamber Method
ASTM D7963	Standard Test Method for Determination of Contamination Level of Fatty Acid Methyl Esters in Middle Distillate and Residual Fuels Using Flow Analysis by Fourier-Transform Infrared Spectroscopy-Rapid Screening Method
ASTM D8183	Standard Test Method for Determination of Indicated Cetane Number (ICN) of Diesel Fuel Oils using a Constant Volume Combustion Chamber—Reference Fuels Calibration Method
IP 470	Determination of aluminium, silicon, vanadium, nickel, iron, calcium, zinc and sodium in residual fuel oil by ashing, fusion and atomic absorption spectrometry
IP 500	Determination of the phosphorus content of residual fuels by ultra-violet spectrometry
IP 501	Determination of aluminium, silicon, vanadium, nickel, iron, sodium, calcium, zinc and phosphorus in residual fuel oil by ashing, fusion and inductively coupled plasma emission spectrometry
IP 570	Determination of hydrogen sulfide in fuel oils — Rapid liquid phase extraction method

IP 631	Determination of the contamination level of fatty acid methyl esters in middle distillate and residual fuels using Flow Analysis by Fourier Transform Infrared Spectroscopy — Rapid Screening Method
--------	--

The standard also makes a reference to the BIS Certification Marking of the product, details of which are given in National Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that off specified value in this standard.

NOTE — The technical content of this document has not been enclosed as this is identical with the corresponding ISO Standard. For details, please refer to ISO 8217 : 2024 or kindly contact:

Shri Chinmay Dwivedi

Sc – E & Head (PCD)

Petroleum & Coal related products Department (PCD)

Bureau of Indian Standards

9, B.S. Zafar Marg,

New Delhi-110002

Email: pcd@bis.gov.in

Telephone: 011-23235432

NATIONAL ANNEX A

(National Foreword)

A-1 BIS CERTIFICATION MARKING

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.