

BRITISH STANDARD

Fuel oils for agricultural, domestic and industrial engines and boilers – Specification

ICS 75.160.20



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Committee reference PTI/2

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Third edition, September 1970

Fourth edition, July 1983

Fifth edition, as Part 2, March 1988

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Seventh edition, March 2006

Amendments issued since publication

Amd. no.	Date	Text affected
16678 Corrigendum No. 1	September 2006	Change to Table 1, Carbon residue, Class A2 and Table 1, Sediment from mg/kg to mg/l.

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Foreword

Publishing information

This British Standard was published by BSI and came into effect on 31 March 2006. It was prepared by Technical Committee PTI/2, *Liquid fuels*.

Supersession

It supersedes BS 2869:1998, which is withdrawn.

Information about this document

BS 2869 was first published as a combination of earlier standards in 1957, and subsequent revisions took place in 1967, 1970 and 1983. In 1988, in expectation of a European Standard for automotive diesel fuel, prepared by the European Committee for Standardization (CEN), BS 2869 was split into the following parts:

- *Part 1: Specification for automotive diesel fuel (class A1);*
- *Part 2: Specification for fuel oil for agricultural and industrial engines and burners (classes A2, C1, C2, D, E, F, G and H).*

BS 2869-1:1988 was withdrawn and superseded by BS EN 590 in 1993.

There are some applications for which, for technical or other reasons, limits different to those in this standard or additional requirements might be necessary. This standard does not cover special applications, which should be the subject of agreements between the supplier and purchaser of fuel oils.

Council Directive 1999/32/EC [1] limits the sulfur content of gas oil (other than some gas oil marketed as diesel fuel) to 0.2% (*m/m*), and of residual fuel oils, to 1% (*m/m*), determined in accordance with BS 2000-336 (BS EN ISO 8754:1995). This Directive further reduces the sulfur content of gas oil to 0.1% (*m/m*) from 1 January 2008.

The principal differences between BS 2869:1998 and this edition are:

- a) the maximum sulfur content of the residual fuels grades has been reduced to 1%;
- b) an alternative method for the determination of a derived cetane number is introduced;
- c) the test method for water content of classes A2 and D has changed;
- d) the test method for the determination of distillation characteristics has been revised for both the middle distillate and the kerosine grades;
- e) the test method for the sulfur content of class C1 kerosine is changed;
- f) the test method for the water content of classes E, F, G and H is confirmed;
- g) changes are introduced to the method for determination of sediment for classes A2 and D, and a new specification level introduced;

- h) in response to concerns of users, minimum values for kinematic viscosity are explicitly specified for the residual fuel grades;
- i) a lubricity requirement is introduced for low sulfur (500 mg/kg maximum) automotive gas oils;
- j) the inclusion of up to 5% (V/V) of Fatty Acid Methyl Ester (FAME) conforming to the appropriate British Standard is permitted.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principle auxiliary verb is “shall”.

Commentary, explanation and general informative material are presented in smaller italic type, and do not constitute normative elements.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

NOTE Annex A, Annex B and Annex C provide information on fuel types and applications, storage and handling, and properties of fuels respectively. Additional information on storage and handling is given in BS 6380.

This British Standard specifies requirements for eight classes of petroleum fuels for engines and boilers used in agricultural, domestic and industrial applications.

This British Standard does not preclude lawful use of one class of fuel in an application designed for use with a fuel of another class. However it is strongly recommended that only class C1 burner fuel is used in flueless domestic appliances, and it is advised that tests or consultation with the equipment manufacturer is carried out if fuel is to be used for a purpose other than that for which it is classified in this British Standard.

2 Normative references

NOTE Copies of the BS 2000 series of standards and IP standard methods of analysis and testing are available from the Energy Institute, 61 New Cavendish Street, London, W1G 7AR.

The following referenced documents are indispensable for the application of this document. For dated references only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 2000-4 (BS EN ISO 6245), *Methods of test for petroleum and its products – Part 4: Petroleum products – Determination of ash*

BS 2000-10, *Methods of test for petroleum and its products – Part 10: Determination of kerosine burning characteristics – 24 hour method*

BS 2000-34 (BS EN ISO 2719), *Determination of flash point – Pensky-Martens closed cup method*

BS 2000-41:1999 (BS EN ISO 5165:1998), *Methods of test for petroleum and its products – Part 41: Petroleum products – Determination of the ignition quality of diesel fuels – Cetane engine method*

BS 2000-57, *Methods of test for petroleum its products – Part 57: Petroleum products – Determination of the smoke point of kerosine*

BS 2000-71, Section 1 (BS EN ISO 3104), *Methods of test for petroleum and its products – Section 1: Petroleum products – Transparent and opaque liquids – Determination of kinematic viscosity and calculation of dynamic viscosity*

BS 2000-74 (BS ISO 3733), *Methods of test for petroleum and its products – Part 74: Petroleum products and bituminous materials – Determination of water – Distillation method*

BS 2000-123 (BS EN ISO 3405), *Methods of test for petroleum and its products – Part 123: Petroleum products – Determination of distillation characteristics at atmospheric pressure*

BS 2000-139 (BS ISO 6618), *Methods of test for petroleum and its products – Part 139: Petroleum products and lubricants – Neutralization number – Colour-indicator titration method*

BS 2000-154 (BS EN ISO 2160), *Petroleum products – Corrosiveness to copper – Copper strip test*