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Petroleum products — Determination of carbon residue — Micro method

Produits pétroliers — Détermination du résidu de carbone — Méthode micro

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 28, *Petroleum products and lubricants*.

This second edition cancels and replaces the first edition (ISO 10370:1993). Apart from updates regarding reference fuels and chemicals, the results of an interlaboratory study carried out by the Energy Institute in the UK on the 10 % volume distillation residue procedure for middle distillates using 4 ml vials and automatic distillation units, have been incorporated. It also incorporates ISO 10370:1993/Cor1:1996.

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Petroleum products — Determination of carbon residue — Micro method

WARNING — The use of this International Standard may involve hazardous materials, operations, and equipment. This International Standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this International Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard specifies a method for the determination of the amount of carbon residue, in the range 0,10 % (*m/m*) to 30,0 % (*m/m*), left after evaporation and pyrolysis of petroleum products under specified conditions.

NOTE 1 The carbon residue value serves as an approximation of the tendency of petroleum products to form carbonaceous deposits under similar degradation conditions, and may be useful in the assessment of relative carbon-forming tendencies of products within the same class. In this case, care should be taken in the interpretation of results.

For products which yield a residue in excess of 0,10 % (*m/m*), the test results are equivalent to those obtained by the Conradson carbon residue test (see ISO 6615[1]) in the range of 0,10 (*m/m*) to 25,0 (*m/m*) (for details see Annex A).

This International Standard is also applicable to petroleum products which consist essentially of distillate material, and which may yield a carbon residue below 0,10 % (*m/m*). On such materials, a 10 % (*V/V*) distillation residue is prepared by the procedure described in 7.3.1 and 7.3.2 before analysis.

Both ash-forming constituents, as defined by ISO 6245[2] and non-volatile additives present in the sample add to the carbon residue value and are included in the total value reported.

NOTE 2 The presence of organic nitrates incorporated in certain distillate fuels will yield abnormally high values for the carbon residue. The presence of alkyl nitrate in the fuel may be detected by ISO 13759.[3]

2 Normative references

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

ISO 3405, *Petroleum products — Determination of distillation characteristics*

3 Terms and definitions

For the purposes of this document, the following term and definition apply

3.1
carbon residue
the whole residue produced of a sample from the specific conditions of evaporation and pyrolysis described in this International Standard

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