International Standard

ISO 1171

Coal and coke — Determination of ash

Charbon et coke — Détermination des cendres

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Foreword

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This document was prepared by Technical Committee ISO/TC 27, *Coal and coke*, Subcommittee SC 5, *Methods of analysis*.

This fifth edition cancels and replaces the fourth edition (ISO 1171:2010), which has been technically revised.

The main changes are as follows:

— title and references changed to be consistent with the new name of ISO/TC 27

— editorial updates to be in line with ISO 80000-1

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

After coal or coke has been incinerated in air, ash remains. The ash is derived from inorganic complexes present in the original coal substance and from associated mineral matter. Therefore, the result of the determination is “ash” and not “ash content” as coal does not contain any ash.

The amount of sulfur retained in the ash is in part dependent on the procedure to determine the ash. No deviations are expected when following the procedure specified in this document.

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Coal and coke — Determination of ash

1 Scope

This document specifies a method for the determination of the ash of coal and coke.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 1213-2, *Solid mineral fuels — Vocabulary — Part 2: Terms relating to sampling, testing and analysis*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1213-2 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

The test portion is heated in air at a specified rate up to a temperature of 815 °C ± 10 °C and maintained at this temperature until constant in mass.

The ash is calculated from the mass of the residue after incineration.

5 Apparatus

5.1 Balance, capable of reading to the nearest 0,1 mg**.**

5.2 Furnace, capable of giving a zone of uniform temperature at the levels required by the procedure and reaching these levels in the specified times.

The ventilation through the furnace shall be such as to give five to ten air changes per min.

Alternatively, two furnaces may be used: one capable of achieving an adequate zone at a uniform temperature of approximately 500 °C; and the other capable of maintaining a temperature of 815 °C ± 10 °C.

5.3 Dish, of silica, porcelain or platinum, 8 mm to 15 mm deep, of such a size that the sample loading does not exceed 0,15 g/cm^2 for coal and 0,10 g/cm^2 for coke.

5.4 Plate, for use with coke samples, made from silica or heat-resistant steel, approximately 6 mm-thick and of such a size as to slide easily into the furnace (5.2).

5.5 Desiccator or other closed container**.**

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