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Solid mineral fuels — Determination of ash

Combustibles minéraux solides — Détermination des cendres

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 562 was prepared by Technical Committee ISO/TC 27, *Solid mineral fuels*, Subcommittee SC 5, *Methods of analysis*.

This fourth edition cancels and replaces the third edition (ISO 1171:1997), of which it constitutes a minor revision. (It also incorporates the Technical corrigendum ISO 1171:1997/Cor.1:1998.)

Introduction

The ash remaining after coal or coke has been incinerated in air 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 conditions of ashing and, in order to obtain values for the ash on a comparable basis, it is necessary to adhere strictly to the conditions specified.

Solid mineral fuels — Determination of ash

1 Scope

This International Standard specifies a method for the determination of the ash of all solid mineral fuels.

2 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.

3 Apparatus

3.1 Balance, capable of weighing to the nearest 0,1 mg.

3.2 Furnace, capable of giving a zone of substantially 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 minute.

NOTE The number of air changes per minute can be assessed by the measurement of the air flow in the furnace flue with a pitot-static tube and a suitable manometer.

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

3.3 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.

3.4 Plate, for use with coke samples, made from silica or heat-resistant steel, 6 mm thick and of such a size as to be an easy sliding fit into the furnace (3.2).

3.5 Desiccator or **other closed container**.

4 Preparation of test sample

The coal or coke used for the determination of ash is the general analysis test sample (ground to pass a sieve of 212 µm aperture).

The sample shall be well mixed and in moisture equilibrium with the laboratory atmosphere.

5 Procedure

Weigh to the nearest 0,1 mg, the clean, dry dish (3.3) (see next paragraph), spread approximately 1 g of the sample (Clause 4) evenly in the dish and reweigh.