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## Coal — Determination of mineral matter

*Charbon — Détermination du taux de matières minérales*



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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](http://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](http://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 27, *Solid mineral fuels*, Subcommittee SC 05, *Methods of analysis*.

This third edition cancels and replaces the second edition (ISO 602:1983), which constitutes a minor revision.

# Coal — Determination of mineral matter

## 1 Scope

This International Standard specifies a method of determining the amount of mineral matter in all types of coal, including brown coals and lignites.

## 2 Normative references

There are no normative references cited in this document.

## 3 Principle

The following principle applies:

- partial demineralization of a sample of the coal by treatment with hydrochloric and hydrofluoric acids under such conditions that the coal substance remains unaffected;
- recording of the loss in mass of the coal due to the acid treatment and determination of the undissolved part of the mineral matter by ashing the partially demineralized coal;
- determination of the iron content of the ash so that the pyrites present in the extracted coal can be calculated; and
- determination of the amount of hydrochloric acid absorbed by the coal substance.

## 4 Reagents

During the analysis, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

**4.1 Hydrochloric acid**,  $\rho$  1,18 g/ml.

**4.2 Hydrochloric acid**, solution,  $c(\text{HCl})$  5 mol/l.

**4.3 Hydrofluoric acid**,  $\rho$  1,13 g/ml.

**WARNING — Very toxic by inhalation, in contact with skin, and if swallowed. Causes severe burns.**

**Keep container tightly closed in a well-ventilated place. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.**

**Wear suitable protective clothing and gloves. In case of accident or feeling unwell, seek medical advice immediately (show the label where possible).**

## 5 Apparatus

All the apparatus listed below shall be resistant to acids, especially hydrofluoric acid. A suitable material is polyvinyl chloride (PVC).

**5.1 Beaker**, of capacity 200 ml, with a cover slip.