



**International  
Standard**

**ISO 1171**

**Coal and coke — Determination of ash**

*Charbon et coke — Détermination des cendres*

**Fifth edition  
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ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

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**Contents**

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>1</b>
<b>5 Apparatus</b> .....	<b>1</b>
<b>6 Preparation of test sample</b> .....	<b>2</b>
<b>7 Procedure</b> .....	<b>2</b>
7.1 General.....	2
7.2 Ash determination.....	2
<b>8 Expression of results</b> .....	<b>2</b>
<b>9 Precision</b> .....	<b>3</b>
9.1 Repeatability limit.....	3
9.2 Reproducibility limit.....	3
<b>10 Test report</b> .....	<b>3</b>
<b>Bibliography</b> .....	<b>4</b>

## Foreword

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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 document 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)).

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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](http://www.iso.org/members.html).

## 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  $815\text{ °C} \pm 10\text{ °C}$  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  $500\text{ °C}$ ; and the other capable of maintaining a temperature of  $815\text{ °C} \pm 10\text{ °C}$ .

**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  $0,15\text{ g/cm}^2$  for coal and  $0,10\text{ g/cm}^2$  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.