

# INTERNATIONAL STANDARD

**ISO**  
**351**

Third edition  
1996-02-15

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## **Solid mineral fuels — Determination of total sulfur — High temperature combustion method**

*Combustibles minéraux solides — Dosage du soufre total — Méthode  
par combustion à haute température*



Reference number  
ISO 351:1996(E)

## 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.

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.

International Standard ISO 351 was prepared by Technical Committee ISO/TC 27, *Solid mineral fuels*, Subcommittee SC 5, *Methods of analysis*.

This third edition cancels and replaces the second edition (ISO 351:1984), which has been technically revised.

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## Introduction

An alternative method to that specified in this International Standard is given in ISO 334:1992, *Solid mineral fuels — Determination of total sulfur — Eschka method*.

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# Solid mineral fuels — Determination of total sulfur — High temperature combustion method

## 1 Scope

This International Standard specifies a method of determining the total sulfur content of hard coal, brown coal and lignite, and coke by high temperature combustion.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 331:1983, *Coal — Determination of moisture in the analysis sample — Direct gravimetric method.*

ISO 587:1981, *Solid mineral fuels — Determination of chlorine using Eschka mixture.*

ISO 687:1974, *Coke — Determination of moisture in the analysis sample.*

ISO 1015:1992, *Brown coals and lignites — Determination of moisture content — Direct volumetric method.*

ISO 1170:1977, *Coal and coke — Calculation of analyses to different bases.*

ISO 1988:1975, *Hard coal — Sampling.*

ISO 2309:1980, *Coke — Sampling.*

ISO 5068:1983, *Brown coals and lignites — Determination of moisture content — Indirect gravimetric method.*

ISO 5069-2:1983, *Brown coals and lignites — Principles of sampling — Part 2: Sample preparation for determination of moisture content and for general analysis.*

## 3 Principle

A known mass of a sample of coal or coke is burnt in a stream of oxygen, in a tube furnace at a temperature of 1 350 °C. The acid gases formed (chlorine and oxides of sulfur) are absorbed in hydrogen peroxide and subsequently determined titrimetrically. A correction is made to take account of any chlorine liberated and a suitable combustion additive prevents the retention of sulfur in the ash.

## 4 Reactions

