
**Solid mineral fuels — Determination
of phosphorus content — Reduced
molybdophosphate photometric
method**

*Combustibles minéraux solides — Dosage du phosphore — Méthode
photométrique au molybdophosphate réduit*

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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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 27, *Solid minerals fuels*, Subcommittee SC 5, *Methods of analysis*.

This second edition cancels and replaces the first edition (ISO 622:1981), which has been technically revised. This document incorporates changes related to references and other minor items following its systematic review.

Solid mineral fuels — Determination of phosphorus content — Reduced molybdophosphate photometric method

1 Scope

This document specifies a reduced molybdophosphate photometric method for the determination of the total phosphorus content of hard coal, lignites and coke. Two methods for taking the phosphorus into solution are specified, namely extraction from the coal or coke ash with acid or by repeated oxidation of the coal or coke, by acid, to remove carbonaceous matter.

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 383, *Laboratory glassware — Interchangeable conical ground joints*

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 1171, *Solid mineral fuels — Determination of ash*

ISO 18283, *Hard coal and coke — Manual sampling*

3 Terms and definitions

No terms and definitions are defined in this document.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Principle

4.1 Extraction

Method 1: Removal of carbonaceous material by ashing in a muffle furnace under specified conditions, and extraction of phosphorus by treatment with hydrofluoric and sulphuric acids.

Method 2: Removal of carbonaceous material by repeated oxidation with nitric acid in the presence of sulphuric acid.

4.2 Determination

Addition of ammonium molybdate and ascorbic acid solution to the acid solution. Measurement of the absorbance of the resulting blue solution by a suitable optical instrument.