
**Brown coals and lignites —
Determination of yield of benzene-
soluble extract — Semi-automatic
method**

*Charbons bruns et lignites — Détermination du rendement en extrait
de benzène soluble — Méthode semi-automatique*



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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
Website: www.iso.org

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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 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).

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For an explanation of the voluntary nature of standards, 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 www.iso.org/iso/foreword.html.

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 975:2013), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- referenced documents have been updated;
- terms and definitions have been added;
- sample has been added;
- calculation and expression of results have been amended;
- precision has been amended;
- test report has been amended.

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

Introduction

The determination of yield of benzene-soluble extract is carried out using a semi-automatic instrument; a system combining extraction, rinsing and evaporation. As long as the sample is put in the extraction chamber of the instrument, the test can be done automatically.

Brown coals and lignites — Determination of yield of benzene-soluble extract — Semi-automatic method

1 Scope

This document specifies a semi-automatic method for determination of the yield of benzene-soluble extract in brown coals and lignites.

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 5068-2, *Brown coals and lignites — Determination of moisture content — Part 2: Indirect gravimetric method for moisture in the analysis sample*

ISO 13909-4, *Hard coal and coke — Mechanical sampling — Part 4: Coal — Preparation of test samples*

ISO 18283, *Coal and coke — Manual sampling*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological 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

A test portion of the brown coal or lignite is extracted with benzene in a semi-automatic extraction instrument. The solvent is then removed by evaporation and the soluble residue dried to constant mass. The percentage of benzene-soluble extract is calculated from the mass of residue after drying and is reported on the dry basis.

5 Reagent

5.1 Benzene, of analytical reagent grade, $\rho_{20} = 0,876$ g/ml, distillation range 80 °C to 81 °C. At least 95 % shall distil within this range.

WARNING — Benzene is flammable and toxic by inhalation, ingestion or skin absorption. The test must be carried out in a hood and the benzene must be recovered as completely as possible.

6 Apparatus

6.1 Semi-automatic extraction instrument, containing mainly two units: the continuous extraction-evaporation device and the controller. The continuous extraction-evaporation device consists of a 100 ml conical flask, an extraction chamber and a condenser. The extraction chamber