



**International
Standard**

ISO 687

**Coke — Determination of moisture
in the general analysis test sample**

*Coke — Détermination de l'humidité de l'échantillon pour
analyse*

**Fourth edition
2024-03**

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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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This document was prepared by Technical Committee ISO/TC 27, *Coal and coke*, Subcommittee SC 5, *Methods of analysis*.

This fourth edition cancels and replaces the third edition (ISO 687:2010), which has been technically revised.

The main change is as follows:

- adding the optional use of nitrogen and a minimum free space oven.

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 moisture in the general analysis test sample is required to correct the results of certain analytical determinations, e.g. volatile matter and hydrogen, for the effect of water in the determination and to allow all determinations to be corrected to a dry basis.

Since coke is hygroscopic, its moisture will vary with a change in humidity of the atmosphere, and the moisture in the general analysis test sample should therefore be determined whenever test portions are taken for other analytical determinations. If test portions for several analytical determinations are taken at the same time, a single simultaneous moisture determination will suffice to correct those analyses.

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Coke — Determination of moisture in the general analysis test sample

1 Scope

This document specifies a method for determining the moisture in the general analysis test sample of coke. It can be used for the determination of moisture in blast-furnace coke, foundry-coke and other high-temperature carbonization products.

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

A known mass of the coke is heated in air or nitrogen at a pre-set temperature between (optional 105 °C) 120 °C to 200 °C (optional 320 °C) and maintained at this temperature until constant mass is obtained. The moisture is calculated from the loss in mass of the coke. Coke is not liable to oxidation under the conditions stated.

5 Reagents

5.1 Nitrogen (optional), moisture-free, having a volume fraction of oxygen of less than 30 µl/l.

Commercially available nitrogen with moisture of less than 5 µl/l does not require further drying.

6 Apparatus

6.1 Analytical balance, capable of reading to the nearest 0,1 mg.

6.2 Oven, capable of being controlled at a temperature of 120 °C (optional 105 °C) to 200 °C (optional 320 °C) and with a means to allow flow of air or nitrogen.