
**Solid mineral fuels — Hard coal —
Determination of moisture in the
general analysis test sample by
drying in nitrogen**

*Combustibles minéraux solides — Houille — Détermination
de l'humidité de l'échantillon pour analyse par dessiccation en
atmosphère d'azote*



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Foreword

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

This second edition cancels and replaces the first edition (ISO 11722:1999), of which it constitutes a minor revision.

Introduction

The determination of the 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 dry basis.

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

Solid mineral fuels — Hard coal — Determination of moisture in the general analysis test sample by drying in nitrogen

1 Scope

This International Standard specifies a method for determining the moisture in the general analysis test sample of hard coal by drying in nitrogen.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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.

4 Principle

A known mass of the coal is heated in a stream of nitrogen at a temperature between 105 °C and 110 °C and maintained at this temperature until it is constant in mass. The moisture content is calculated from the loss in mass of the coal.

5 Reagent

Nitrogen, moisture-free, having an volume fraction of oxygen of less than 30 µl/l.

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

6 Apparatus

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

6.2 Oven, capable of being controlled at a temperature of 105 °C to 110 °C and with provision for the nitrogen to pass through it at a flow-rate of approximately 15 times the oven volume per hour and of lowest practical volume, i.e. minimum free space.

NOTE An example of a suitable oven is given in [Annex A](#).

6.3 Weighing dish, shallow, of glass or of corrosion-resistant metal, with well-fitting covers, of such a size that the coal layer does not exceed 0,20 g/cm².

6.4 Cooling vessel, e.g. desiccator, without desiccant, containing a metal plate, preferably of aluminium or copper. The vessel may be provided with a means to pass nitrogen through it during the cooling period.