International Standard

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Coal and coke — Determination of arsenic and selenium — Eschka's mixture and hydride generation method

Charbon et coke — Détermination de l'arsenic et du sélénium — Mélange d'Eschka et méthode par production d'hydrure

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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 third edition cancels and replaces the second edition (ISO 11723:2016), which has been technically revised.

The main changes are as follows:

— the normative references have been updated;

— Formulae (1) and (2) have been clarified.

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Coal and coke — Determination of arsenic and selenium — Eschka's mixture and hydride generation method

1 Scope

This document specifies a method using Eschka's mixture during ashing, extraction of the ash residue with acid, and hydride generation atomic absorption spectrometry or hydride generation atomic fluorescence spectrometry, for the determination of arsenic and selenium in solid mineral fuels.

The method is also applicable for the determination of the analytes by hydride generation inductively coupled plasma atomic emission spectrometry.

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

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

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

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

ISO 11722, *Solid mineral fuels — Hard coal — Determination of moisture in the general analysis test sample by drying in nitrogen*

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

ISO 13909-6, *Coal and coke — Mechanical sampling — Part 6: Preparation of test samples of coke*

ISO 18283, *Coal and coke — Manual sampling*

3 Terms and definitions

No terms and definitions are listed in this document.

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 sample is ignited in intimate contact with Eschka's mixture in an oxidizing atmosphere at 800 °C to remove the organic matter. The residue is then extracted with hydrochloric acid and the analytes determined by hydride generation atomic absorption spectrometry or hydride generation atomic fluorescence spectrometry.

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