
**Solid mineral fuels — Determination
of arsenic and selenium — Eschka's
mixture and hydride generation
method**

*Combustibles minéraux solides — Dosage de l'arsenic et du sélénium
— Mélange d'Eschka et méthode par production d'hydrure*

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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Reagents	2
6 Apparatus	3
7 Preparation of the test sample	3
8 Procedure	3
8.1 Blank determination.....	3
8.2 Preparation of test solution.....	3
8.3 Preparation of calibration standards.....	4
8.4 Preparation for measurement.....	4
8.4.1 General.....	4
8.4.2 Arsenic.....	4
8.4.3 Selenium.....	4
9 Measurement by atomic absorption or atomic fluorescence spectrometry after hydride generation	4
10 Expression of results	5
11 Precision	5
11.1 Repeatability.....	5
11.2 Reproducibility critical difference.....	6
12 Test report	6

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).

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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 11723:2004), which has been technically revised. This document incorporates changes related to dated references and other minor items following its systematic review.

Solid mineral fuels — 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.

NOTE The method is also applicable to 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, *Solid mineral fuels — 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 content — Part 2: Indirect gravimetric method for moisture in the analysis sample*

ISO 5069-2, *Brown coals and lignites — Principles of sampling — Part 2: Sample preparation for determination of moisture content and for general analysis*

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

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

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

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:

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

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.