

Australian Standard™

Coal and coke—Analysis and testing

Part 10.1: Determination of trace elements—Coal, coke and fly-ash—Determination of eleven trace elements—Flame atomic absorption spectrometric method

This Australian Standard was prepared by Committee MN-001, Coal and Coke. It was approved on behalf of the Council of Standards Australia on 28 February 2003 and published on 5 March 2003.

The following are represented on Committee MN-001:

Australasian Institute of Mining and Metallurgy
Australian Building Codes Board
Australian Coal Association
Australian Coal Preparation Society
Australian Institute of Energy
Coalfield Geology Council of N.S.W.
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Australian Standard™

Coal and coke—Analysis and testing

**Part 10.1: Determination of trace
elements—Coal, coke and fly-ash—
Determination of eleven trace
elements—Flame atomic absorption
spectrometric method**

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PREFACE

This Standard was prepared by the Standards Australia Committee MN-001, Coal and Coke, to supersede AS 1038.10.1—1986, *Coal and coke—Analysis and testing, Part 10.1: Determination of trace elements—Coal, coke and fly-ash—Determination of eleven trace elements—Flame atomic absorption spectrometric method.*

This revision confirms the flame atomic absorption spectrometric method for the determination of eleven trace elements in coal, coke and fly-ash. Editorial changes have been made to bring the Standard into line with current style.

The objective of this Standard is to provide those responsible for testing coal, coke and fly-ash with a standardized method for measuring eleven trace elements by flame atomic absorption spectrometry and to provide an alternative flame atomic emission spectrometric method for measuring barium in an ashed sample.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard

Coal and coke—Analysis and testing

Part 10.1: Determination of trace elements—Coal, coke and fly-ash—
Determination of eleven trace elements—Flame atomic absorption
spectrometric method**1 SCOPE**

This Standard sets out a method for the preparation of the ash and a flame atomic absorption spectrometric method for the determination of barium, beryllium, chromium, copper, lead, lithium, manganese, nickel, strontium, vanadium and zinc in ash prepared in the laboratory from higher rank coal, coke and fly-ash.

The Standard also provides an optional flame atomic emission spectrometric method for the determination of barium, as it gives improved sensitivity over flame atomic absorption spectrometry and it is not possible to determine barium by the latter technique with some instruments.

NOTE: Two approaches, gravimetric and volumetric, have been specified for solution preparation, both give the same results provided that in the volumetric approach, plastics volumetric ware is used.

2 REFERENCED DOCUMENTS

The following standards are referred to in this standard:

AS

- | | |
|---------|---|
| 1038 | Coal and coke—Analysis and testing |
| 1038.3 | Part 3: Proximate analysis of higher rank coal |
| 1038.4 | Part 4: Coke—Proximate analysis |
| 1038.16 | Part 16: Assessment and reporting of results |
| 2134 | Recommended practice for chemical analysis by atomic absorption spectrometry |
| 2134.1 | Part 1: Flame atomic absorption spectrometry |
| 2243 | Safety in laboratories (series) |
| 2418 | Coal and coke—Glossary of terms |
| 2508 | Safe storage and handling information card (series) |
| 2850 | Chemical analysis—Interlaboratory test programs—For determining precision of analytical method(s)—Guide to the planning and conduct |
| 4264 | Coal and coke—Sampling |
| 4264.1 | Part 1: Higher rank coal—Sampling procedures |
| 4264.2 | Part 2: Coke—Sampling procedures |

3 DEFINITIONS

For the purpose of this Standard the definitions in AS 2418 apply.