AS 1038.6.4—2005

Australian Standard™

Coal and coke—Analysis and testing

Part 6.4: Higher rank coal and coke—Ultimate analysis—Carbon, hydrogen and nitrogen—Instrumental 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 26 September 2005.
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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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PREFACE

This Standard was prepared by the Standards Australia Subcommittee MN-001-01, Coal Evaluation, under the direction of the Committee MN-001, Coal and Coke. This method was developed in accordance with new technology to afford a procedure with a shorter analysis time than those of AS 1038, Part 6.1: *Higher rank coal and coke—Ultimate analysis—Carbon and hydrogen* and Part 6.2: *Higher rank coal and coke—Ultimate analysis—Nitrogen*.

The objective of this Standard is to provide those responsible for the analysis of coal and coke with a uniform method for the instrumental analysis of carbon, hydrogen and nitrogen.

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1 SCOPE

This Standard sets out a method for the determination of carbon, hydrogen and nitrogen in coal and coke by instrumental methods.

2 REFERENCED DOCUMENTS

The following documents 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
2243	Safety in laboratories (series)
2418	Coal and coke—Glossary of terms
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4264.3	Part 3: Lower rank coal—Sampling procedures

3 DEFINITIONS

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

4 PRINCIPLE

Carbon, hydrogen and nitrogen are determined concurrently in a single instrumental procedure. The quantitative conversion of the carbon, hydrogen and nitrogen into their corresponding gases (CO_2, H_2O, NO_x) occurs during combustion of the sample at an elevated temperature in an atmosphere of oxygen.

Combustion products which would interfere with the subsequent gas analysis are removed. The carbon dioxide, water vapour and nitrogen fractions of the gas stream are then determined quantitatively by appropriate instrumental gas-analysis procedures.

5 SAFETY

For information on laboratory safety, reference should be made to the relevant parts of AS 2243.