AS 1038.6.2—2007
Reconfirmed 2017

AS 1038.6.2—2007

Australian Standard®

Coal and coke—Analysis and testing

Part 6.2: Higher rank coal and coke—Ultimate analysis—Nitrogen

This Australian Standard® was prepared by Committee MN-001, Coal and Coke. It was approved on behalf of the Council of Standards Australia on 6 February 2007.
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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
- CSIRO Energy Technology
- Coalfield Geology Council of NSW
- Department Mines and Energy Qld
- Minerals Council of Australia
- National Generators Forum
- University of Newcastle
- University of New South Wales
- University of Queensland

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through public comment period.

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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 1038.6.2—2007
Coal and coke—Analysis and testing
Part 6.2: Higher rank coal and coke—Ultimate analysis—Nitrogen

RECONFIRMATION NOTICE

Technical Committee MN-001 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Australian Coal Preparation Society
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Minerals Council of Australia
National Association of Testing Authorities Australia
The University of New South Wales
The University of Queensland
University of Newcastle

NOTES

Australian Standard®

Coal and coke—Analysis and testing

Part 6.2: Higher rank coal and coke—Ultimate analysis—Nitrogen

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PREFACE

This Standard was prepared by the Standards Australia Committee MN-001, Coal and Coke, to supersede AS 1038.6.2—1997, *Coal and coke—Analysis and testing*, Part 6.2: *Higher rank coal and coke—Ultimate analysis—Nitrogen.*

The objective of this Standard is to provide laboratories within the coal and energy industries with a method for determining the nitrogen content in a sample of coal.

This revision confirms the methods for the determination of nitrogen, and editorial changes have been made to bring the Standard into line with current style.

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FOREWORD

The ultimate analysis of coal and coke comprises the determination of the elements carbon, hydrogen, nitrogen and sulfur. Determination of the total amounts of these elements, regardless of their origin, is described. Carbon includes that which is present in the mineral carbonates and hydrogen includes that which is present both in moisture (for which a correction is made in the calculation) and in water of constitution in the mineral matter. All nitrogen is assumed to be present in the coal and coke substance. Sulfur is normally present in three forms: inorganic sulfides such as iron pyrites (FeS_2), inorganic sulfates associated with the mineral matter and organic sulfur in the coal and coke substance.

An estimate of the percentage of oxygen on an air-dry basis can be obtained by subtracting the sum of the determined percentages of moisture, ash, carbon, hydrogen, nitrogen and sulfur from 100. The value thus obtained should be termed 'oxygen by difference' (see AS 1038.16). A more satisfactory value for oxygen by difference is obtained when the ultimate analysis is expressed on a dry, mineral matter-free basis after making all appropriate corrections.

STANDARDS AUSTRALIA

Australian Standard
Coal and coke—Analysis and testing

Part 6.2: Higher rank coal and coke—Ultimate analysis—Nitrogen

1 SCOPE

This Standard sets out a method for the determination of nitrogen in the analysis sample of higher rank coal or coke by conversion to ammonium sulfate. Two methods for the distillation of ammonia are given.

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
2165	Laboratory glassware—Burettes
2243	Safety in laboratories (series)
2418	Coal and coke—Glossary of terms
2706	Numerical values—Rounding and interpretation of limiting values
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 given in AS 2418 apply.

4 PRINCIPLE

A known mass of sample is heated with concentrated sulfuric acid in the presence of a catalyst to destroy organic material and to convert nitrogen to ammonium sulfate. Ammonia liberated by the addition of excess sodium hydroxide is steam distilled, absorbed in boric acid solution and titrated directly with sulfuric acid solution.

5 SAFETY

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

6 REAGENTS

6.1 General

Unless otherwise specified, all reagents shall be of analytical reagent grade, and only distilled water or water of equivalent purity, shall be used.