

Australian Standard™

**Methods for the analysis and testing of
lower rank coal and its chars**

**Part 4: Dried lower rank coal and its
chars—Determination of apparent
density—Mercury displacement 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 16 September 2002 and published on 1 October 2002.

The following are represented on Committee MN-001:

Australasian Institute of Mining and Metallurgy
Australian Coal Association
Australian Coal Preparation Society
Australian Institute of Energy
CSIRO, Energy Technology
Coalfield Geology Council of New South Wales
Department of Mines and Energy, Queensland
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PREFACE

This Standard was prepared by the Standards Australia Committee MN-001, Coal and Coke to supersede AS 2434.4—1985, *Methods for the analysis and testing of brown coal and brown coal char, Part 4: Determination of the apparent density of dried lower rank coal and its chars (mercury displacement method)*.

The physical structure (porosity) of dried brown coal varies as a result of lithotype variation. This variation is readily observed by determining the apparent density of displacement of mercury at atmospheric pressure; at this pressure mercury will not penetrate pore smaller than 1.2 μm . Effectively, the apparent density obtained by this method is the particle density of the coal. The method is quick, accurate, and readily carried out.

CONTENTS

	<i>Page</i>
1 SCOPE.....	4
2 REFERENCED DOCUMENTS	4
3 DEFINITIONS	4
4 SAFETY	4
5 REAGENTS.....	4
6 APPARATUS	5
7 SAMPLE.....	5
8 PROCEDURE.....	5
9 CALCULATION	6
10 REPEATABILITY	7
11 TEST REPORT	7

STANDARDS AUSTRALIA

Australian Standard

Methods for the analysis and testing of lower rank coal and its chars

Part 4: Dried lower rank coal and its chars—Determination of apparent density—Mercury displacement method

1 SCOPE

This Standard sets out a mercury displacement method for the determination of the apparent density of dried lower rank coal and its char.

2 REFERENCED DOCUMENTS

The following Standards are referred to in this document:

AS

- 2243 Safety in laboratories (series)
- 2418 Coal and coke—Glossary of terms
- 2508 Safe storage and handling information card series

BS

- 5497 Precision of test methods
- 5497.1 Part 1: Guide for the determination of repeatability and reproducibility for a standard test method by inter-laboratory tests

NOTE: BS 5497.1 was superseded in 1998.

3 DEFINITIONS

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

4 SAFETY

For information on laboratory safety, reference should be made to the relevant parts of AS 2243 and AS 2508.

5 REAGENTS

5.1 General

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

5.2 Distilled mercury

Commercially available.

WARNING: MERCURY IS A HAZARDOUS CHEMICAL AND SPECIAL CARE IS NEEDED TO AVOID SPILLAGES. DO NOT STORE IN UNSEALED CONTAINERS.

5.3 High vacuum stopcock grease

A silicone-base grease is not suitable.