Australian Standard™

Refractories and refractory materials—Chemical analysis

Part 5: Chrome-bearing materials

Standards Australia

This Australian Standard was prepared by Committee MN-007, Refractories and Refractory Materials. It was approved on behalf of the Council of Standards Australia on 1 October 2003 and published on 24 November 2003.

The following are represented on Committee MN-007:

Australasian Ceramic Society

Australasian Institute of Mining and Metallurgy

Australian Aluminium Council

Bureau of Steel Manufacturers of Australia

CSIRO Manufacturing and Infrastructure Technology

Institute of Refractories Engineers

Refractories Manufacturers Association of Australia

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PREFACE

This Standard was prepared by the Standards Australia Committee MN-007, Refractories and Refractory Materials, to supersede of AS 2503.5—1989.

This Standard has been editorially updated to bring it into line with the current practices of Standards Australia.

In preparing the original Standard, the corresponding work of ISO/TC 33, Refractories, and BS 1902, *Methods of testing refractory materials*, were extensively drawn upon.

This Standard utilizes titrimetric, UV-visible spectrometric and flame photometric methods of analysis and includes flowsheets depicting the scheme of analysis (see Appendix C).

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

CONTENTS

Page

STANDARDS AUSTRALIA

Australian Standard

Refractories and refractory materials—Chemical analysis

Part 5: Chrome-bearing materials

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out methods for the sampling, sample preparation, and analysis of chrome-bearing refractories and refractory materials. Procedures are described for the determination of—

(a) the loss on ignition*; and

(b) the chemical composition*, viz the amount of silicon, chromium, titanium, iron, aluminium, manganese, calcium, magnesium, sodium, potassium and lithium present in chrome-bearing materials, expressed as the oxides of these elements.

NOTE: Appendix C provides an overview of these test procedures in flowchart form.

This Standard applies to chrome-bearing materials represented by those defined in Clause 1.3, whose composition is typified by Table 1.1. It may be applicable to materials which fall outside these ranges, but if used for such cases, it is necessary to exercise caution when interpreting the results as it cannot be assumed the limits cited in Clause 1.5 apply.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS	
2162	Verification and use of volumetric apparatus
2162.1	Part 1: General—Volumetric glassware
2243	Safety in laboratories (series)
2497	Procedures for acceptance testing of refractory products
2497.1	Part 1: Batch procedure
2508	Safe storage and handling information card (series)
2780	Refractories and refractory materials—Glossary of terms
ISO	
5022	Shaped refractory products—Sampling and acceptance testing

1.3 DEFINITIONS

For the purpose of this Standard, the definitions given in AS 2780 and those below apply.

1.3.1 Chrome-alumina refractory

A refractory made from a mixture of chrome ore and alumina.

* The original paper on which these methods are based is as follows: BENNETT, H. and REED, R.A., *The Analyst*, Vol. 97 (1972), pp. 794-819.

