Australian Standard™

# Guide to sampling of alumina

# Part 2: Preparation of samples

Standards Australia

This Australian Standard was prepared by Committee MN/9, Alumina and Materials used in Aluminium Production. It was approved on behalf of the Council of Standards Australia on 15 February 2000 and published on 8 June 2000.

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The following interests are represented on Committee MN/9:

Australasian Institute of Mining and Metallurgy

Australian Aluminium Council

CSIRO Minerals

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## PREFACE

This Guide was prepared by the Standards Australia Committee MN/9, Alumina and Materials used in Aluminium Production.

This Guide is Part 2 of the AS 4538 series for the sampling of alumina. The other Guide in the series is the following:

Part 1: Sampling procedures

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

## CONTENTS

STANDARDS AUSTRALIA

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## 1 SCOPE

This Guide gives methods for the sample preparation of smelter-grade alumina. It covers the reduction of a bulk sample between 2 kg and 20 kg to produce a sample that is suitable for chemical and physical analysis. The reduced sample produced will be representative of the initial bulk sample. The bulk sample is considered to be from one source.

The methods are suitable for dry, free-flowing aluminas.

As the moisture content will influence many physical analyses, the method aims to minimize the exposure of the sample to the atmosphere to avoid water absorption. For preparation of samples for moisture analysis on an 'as received' basis, refer to AS 2879.1.

## 2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

| | |
|---|---|
| AS | |
| 2243 | Safety in laboratories (series) |
| 2879 | Alumina |
| 2879.1 | Part 1: Determination of loss of mass at 300° Celsius and 1000° Celsius |

## 3 DEFINITIONS

For the purpose of this Guide, the definitions below apply.

### 3.1 Increment

A quantity of material collected in a single operation of a sample device.

### 3.2 Sample preparation

The process of preparing the sample for analysis or testing. It may involve air-drying, particle size reduction, mixing and division, and may be performed in several stages.

### 3.3 Sample preparation stage

A stage in the sample preparation sequence of operations that may consist of sample drying, reduction in particle size, mixing, and which culminates in sample division. The completion of each operation of sample division defines the commencement of the next sample preparation stage. Thus, the number of stages in sample preparation is equal to the number of divisions made.

## 4 PRINCIPLE

The bulk sample is mixed using a rotary splitter and the sample reduced to the desired size and then further divided by rotary splitting into appropriate sized portions suitable for the analyses required.