INTERNATIONAL STANDARD

ISO 806

Second edition
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Aluminium oxide primarily used for the production of aluminium — Determination of loss of mass at 300 °C and 1 000 °C

Oxyde d'aluminium principalement utilisé pour la production de l'aluminium — Détermination de la perte de masse à 300 °C et à 1 000 °C

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 806 was prepared by Technical Committee ISO/TC 226, *Materials for the production of primary aluminium*.

This second edition cancels and replaces the first edition (ISO 806:1976) together with ISO 803:1976, which have been technically revised. This International Standard is based on AS 2879.1-2000 prepared by the Standards Australia Committee MN/9, Alumina and Materials used in Aluminium Production, as a revision of AS 2879:1986, *Alumina — Determination of loss of mass at 300 °C and 1 000 °C*.

Introduction

The objective of this revision is to incorporate sample preparation procedures, improve the description of the method and to provide a method for determination of loss of mass by automatic procedures.

Aluminium oxide primarily used for the production of aluminium — Determination of loss of mass at 300 °C and 1 000 °C

1 Scope

This International Standard specifies a method for the determination of loss of mass on heating of aluminium oxide at 300 °C and further loss of mass on ignition at 1 000 °C. By industry convention, these mass losses are often referred to as “moisture (MOI)” and “loss on ignition (LOI)” respectively.

This method is suitable for calcined alumina in the range 0,2 % to 5 % loss of mass at 300 °C and 0,1 % to 2 % loss of mass at 1 000 °C.

This method provides for samples to be treated on an “as-received” basis for determination of actual MOI and LOI in alumina samples. To improve precision of analysis in cases where “as-received” results are not required, samples can be “air-equilibrated” prior to analysis. “Air-equilibration” can greatly affect MOI results and significantly alter LOI results. The “air-equilibration” procedure and its effects are discussed in Annex A.

Instrumental methods are also discussed.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AS 2850, *Chemical analysis — Interlaboratory test programs — For determining precision of analytical method(s) — Guide to the planning and conduct*

3 Principle

The test portion of aluminium oxide is dried at 300 °C for 2 h and the loss of mass is determined by mass difference. The test portion is then ignited at 1 000 °C for 2 h and the further loss of mass is determined.

4 Desiccants

WARNING — Because of the risk of explosion, do not attempt regeneration of magnesium perchlorate by oven drying. Magnesium perchlorate and phosphorus pentoxide are hazardous and reference should be made to appropriate material safety information.

One of the following desiccants shall be used:

a) phosphorus pentoxide;

b) activated alumina;

c) magnesium perchlorate.