Australian Standard®

Alumina

Part 7: Determination of trace elements—Wavelength dispersive X-ray fluorescence spectrometric method

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 30 September 1996 and published on 5 January 1997.

The following interests are represented on Committee MN/9:

Australasian Institute of Mining and Metallurgy

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PREFACE

This Standard was prepared by the Standards Australia Committee on Alumina and Materials used in Aluminium Production, to provide an XRF method for the analysis of alumina.

The objective of this Standard is to provide those responsible for the analysis of smelting-grade alumina with a standardized, validated procedure that will ensure the integrity of the analysis.

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

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STANDARDS AUSTRALIA

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Part 7: Determination of trace elements—Wavelength dispersive X-ray fluorescence spectrometric method

1 SCOPE This Standard sets out a wavelength dispersive X-ray fluorescence spectrometric method for the analysis of aluminium oxide for trace amounts of any or all of the following elements: sodium, silicon, iron, calcium, titanium, phosphorus, vanadium, zinc, manganese, gallium, potassium, copper, chromium and nickel (expressed as the oxides Na_2O, SiO_2, Fe_2O_3, CaO, TiO_2, P_2O_5, V_2O_5, ZnO, MnO, Ga_2O_3, K_2O, CuO, Cr_2O_3 and NiO on an as-received basis).

The method is applicable to smelting-grade aluminium oxide. The concentration range covered for each of the components is given in Table 1.

TABLE 1

APPLICABLE CONCENTRATION RANGE

Component	Concentration range %
Na_2O	0.10 to 1.00
SiO_2	0.005 to 0.05
Fe_2O_3	0.005 to 0.05
CaO	0.01 to 0.10
TiO_2	0.001 to 0.010
P_2O_5	0.001 to 0.050
V_2O_5	0.001 to 0.010
ZnO	0.001 to 0.010
MnO	0.001 to 0.010
Ga_2O_3	0.001 to 0.020
K_2O	0.001 to 0.010
CuO	0.001 to 0.010
Cr_2O_3	0.001 to 0.010
NiO	0.001 to 0.010

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

2508 Safe storage and handling information cards for hazardous materials

2508.8.013 Part 8.013: Hydrofluoric acid (aqueous)

2563 Wavelength dispersive X-ray fluorescence spectrometers—Determination of precision

2706 Numeric values—Rounding and interpretation of limiting values