

DIN EN ISO 21068-3:2008-12 (E)

Chemical analysis of silicon-carbide-containing raw materials and refractory products - Part 3: Determination of nitrogen, oxygen and metallic and oxidic constituents (ISO 21068-3:2008)

Contents		Page
Foreword		3
Introduction		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	6
4	Determination of nitrogen and oxygen	6
4.1	General	6
4.2	Combined determination of nitrogen and oxygen by an analyser with thermal conductivity (CR) and infrared absorption (IR) detection	6
5	Determination of nitrogen calculated as Si₃N₄	8
5.1	General	8
5.2	Acid decomposition -- Titration method	9
5.3	Acid decomposition -- Photometry method	13
5.4	Inert-gas fusion -- Thermal conductivity method	16
5.5	Determination of total nitrogen	21
6	Determination of free Iron by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES)	21
6.1	General	21
6.2	Copper sulfate method	22
6.3	Bromine/methanol method	23
7	Determination of free aluminium and free magnesium	26
7.1	General	26
7.2	Acid decomposition -- Inductively coupled plasma atomic emission spectroscopy (ICP-AES)	26
7.3	Acid decomposition -- Flame Atomic Absorption Spectrometry (FAAS)	28
7.4	Hydrogen generating method	29
8	Analysis of oxides	30
8.1	General	30
8.2	Wet methods	30
8.3	Flame atomic absorption and/or inductively coupled plasma atomic emission spectrometer	30
8.4	XRF fusion method after ignition of the sample	31
8.5	Determination of silicon(IV) oxide, aluminium oxide, iron(III) oxide, titanium(IV) oxide, calcium oxide, magnesium oxide, sodium oxide, potassium oxide, chromium(III) oxide, zirconium oxide, and boron oxide	33
9	Expression of results	35
10	Test report	35

Annex A (informative) Statistical results obtained with analysis of refractories containing carbon and/or silicon carbide	36
Bibliography	41