

ICS 71.100.10
CCS Q 52

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**NONFERROUS METALS INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

YS/T 575.17-2007

**Methods for chemical analysis of bauxite. Part 17:
Determination of sulfur content. Direct combustion-iodometric
method**

(English Translation)

Issued on: November 14, 2007

Implemented on: May 1, 2008

Issued by: National Development and Reform Commission

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Foreword

YS/T 575-2007 "Methods for chemical analysis of bauxite", the revision to YS/T 575-2006 (formerly GB/T 3257-1999), is divided into 24 parts.

- Part 1.Determination of aluminum oxide content - EDTA titration method
- Part 2.Determination of silica dioxide content - Gravimetric-molybdenum blue photometric method
- Part 3.Determination of silica dioxide content - Molybdenum blue photometric method
- Part 4.Iron oxide content - Potassium dichromate titration method
- Part 5.Determination of iron trioxide content - Orthopenanthroline photometric method
- Part 6.Determination of titanium dioxide content - Diantipyryl methane photometric method
- Part 7.Determination of calcium oxide content - Flame atomic absorption spectrophotometric method
- Part 8.Determination of magnesium oxide content - Flame atomic absorption spectrophotometric method

- Part 9.Determination of content of potassium oxide and sodium oxide - Flame atomic absorption spectrophotometric method
 - Part 10.Determination of manganese oxide content - Flame atomic absorption spectrophotometric method
 - Part 11.Determination of chromium oxide content - Flame atomic absorption spectrophotometric method
 - Part 12.Determination of vanadium pentoxide content - benzoyl phenyl hydroxylamine photometric method
 - Part 13.Determination of zinc content - Flame atomic absorption spectrophotometric method
 - Part 14.Determination of total rare earth oxide content - Tribromoarsenazo photometric method
 - Part 15.Determination of gallium oxide content - Rhodamine B-extraction photometric method
- Methods for chemical analysis of bauxite -
- Part 17.Determination of sulfur content -
- Direct combustion - iodometric method

1 Scope

This Part specifies the determination method of sulfur content in bauxite.

This Part applies to the determination of sulfur content in bauxite. The determination range. $\leq 3.00\%$.

2 Method Summary

In the presence of a flux, the sample is heated for decomposition in an oxygen stream at $1300^{\circ}\text{C} \pm 20^{\circ}\text{C}$; the sulfur dioxide generated is absorbed by water to form sulfurous acid; use starch as the indicator; use iodine standard titration solution for titration, so as to determine the sulfur content; the combined water in the sample influences the precision; use rining method to eliminate.

3.4 Mixed flux. mix vanadium pentoxide and boron oxide of equal-mas; grind it finely; then

dry it under 105°C~110°C before use.

3.6 Solution of potassium permanganate (50 g/L). dissolve 10g of potassium permanganate in 200 mL of potassium hydroxide (3.5).

3.7 Absorption solution. use a little water to mix 0.5g of soluble starch; stir it into a paste; add 100 mL of boiling water; stir and heat it to dissolve until transparent; use water to dilute to 1L; drop-add iodine standard titration solution (3.8) until sky blue; transfer it to a volumetric flask or under jar (3 in Figure 1); use water to dilute to 1 L; shake up; store it in an amber bottle; use it after storage overnight.

3.8 Titration solution

Table 1

Mass fraction of sulfur content / % Allowable difference /%

<=0.050 0.01

>0.050 ~ 0.100 0.02

>0.10 ~ 0.50 0.04

>0.50 ~ 1.00 0.08

>1.00 ~ 3.00 0.15

9 Quality assurance and control

Use standard samples or control samples for verification during the analysis, or use standard samples or control samples for verification at least once a year. When the process is out of control, the causes shall be identified. And the verification shall be carried out once again after the mistakes are corrected.

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