

ICS 77.080.01

CCS H 11



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 223.75-2008

Replacing GB/T 223.75-1991

**Iron, steel and alloy -- Determination of boron content --
Methanol distillation-curcumin photometric method**

钢铁及合金 硼含量的测定 甲醇蒸馏-姜黄素光度法

(English Translation)

Issued on: May 13, 2008

Implemented on: November 1, 2008

Issued by: Standardization Administration of China

Table of Contents

Foreword
1 Scope
2 Normative references
4 Reagents

Foreword

This section GB/T 223 instead of GB/T 223.75-1991 "steel and alloy chemical analysis of the methanol distillation - curcumin photometric Determination of boron content. " this portion of the GB/T 223.75-1991 compared primarily with the following modifications.

- Sample processing. the use of sulfur - phosphorus mixed acid decomposition boride determination of total boron;
- Distillation. the use of improved horizontal synchronizing distillation unit;
- Color Condition. on a boiling water bath evaporated under stable conditions phenol color.

Appendix A of this section is informative appendix.

This part is proposed by the China Iron and Steel Association.

This part of the National Steel Standardization Technical Committee.

This section drafted by. China Iron and Steel Research Institute Group, Benxi Iron and Steel (Group) Co., Ltd. Technology Center physical and chemical detection, in ASTRI Shenyang metal, Maanshan Iron & Steel Co., Ltd. Technical Center, Chongqing Iron and Steel Company Steel Institute.

Drafters of this section. Ge Ru Bin Huxiu Wei, Hu Xiaoyan.

This part of the standard replaces the previous editions are.

GB/T 223.75-1981, GB/T 223.75-1991.

Determination of boron content, steel and alloy Methanol distillation - curcumin spectrophotometry Warning. Use of this section shall be a person experiences regular laboratory work. This section does not indicate that all possible security issues.

Users have the responsibility to take appropriate safety and health practices and to ensure compliance with the conditions relevant national regulations.

1 Scope

GB/T 223 provisions of this part of the methanol distillation - curcumin spectrophotometric determination of boron content.

This section applies to carbon steel, alloy steel, high temperature alloys and precision alloys for the determination of the mass fraction of 0.0005% to 0.20% boron content.

2 Normative references

The following documents contain provisions which, through reference GB/T 223 of this text, constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 6379.1 accuracy of testing methods and results (trueness and precision) Part 1 General principles and definitions GB/T 6379.2 Test methods and results - Accuracy (trueness and precision) Part 2 standard measurement method to determine the weight the basic method of refolding and reproducibility GB/T 20066 Steel and iron - Sampling and determination of the chemical composition of the sample with a sample preparation method Principle 3 After the sample is dissolved by acid, phosphoric acid and sulfuric acid decomposition of boron compounds boric acid and methanol to methyl ester separation by distillation and other elements. in Oxalic acid in the presence of boron with curcumin form a red complex, the absorbance is measured at 545nm wavelength.

4 Reagents

Unless otherwise indicated in the analysis using only confirmed for the gifted class pure reagents and double distilled water or equivalent purity.

4.1

Methanol, analytical grade.

4.2

acetone, AR.

Hydrogen peroxide 4.3, rho of about 1.10g/mL.

4.4

sulfuric acid, rho about 1.84g/mL.

4.5

sulfuric acid, 1 + 6, with rho of about 1.84g/mL dilution.

4.6

phosphoric acid, rho about 1.69g/mL. MOS level.

4.7

nitric acid, rho about 1.42g/mL.

4.8

hydrochloric acid, rho about 1.19g/mL.

4.9

HCl, 1 + 4, with rho of about 1.19g/mL dilution.

4.10

sulfur - phosphorus mixed acid, 2 + 5 + 3, water, phosphoric acid, sulfuric acid and mix.

4.11

calcium hydroxide suspension, weighed 3.7g calcium hydroxide with water to a volume of 500mL, stored in a plastic bottle with a time and mix.

4.12

oxalic acid, 100g/L.

4.13

curcumin - ethanol, 0.5g/L. Weigh 0.05g curcumin dissolved in 100mL anhydrous ethanol, with a filter paper in plastic fast Feeding bottle storage.