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

GB/T 4702.16-2025

Replacing GB/T 4702.16-2008

**Chromium metal - Determination of sulfur content - Infrared
absorption method and combustion-neutralization titration
method**

金属铬 硫含量的测定 红外线吸收法和燃烧中和滴定法

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

This document is Part 16 of GB/T 4702. GB/T 4702 has the following parts published.

- Determination of Chromium Content by Ferrous Ammonium Sulfate Titration Method (GB/T 4702.1);
- Determination of Chromium and Silicon Content by Perchloric Acid Gravimetric Method (GB/T 4702.2);
- Determination of Chromium and Phosphorus Content. Bismuth-phosphorus-molybdenum blue spectrophotometric method (GB/T 4702.3);
- Determination of chromium and ferrochrome content by disodium ethylenediaminetetraacetate titration and flame atomic absorption spectrometry (GB/T 4702.4);
- Determination of Chromium and Aluminum Content by Disodium Ethylenediaminetetraacetate Titration and Flame Atomic Absorption Spectrometry (GB/T 4702.5);
- Determination of the content of metallic chromium, ferrochrome, aluminum, silicon and copper by inductively coupled plasma atomic emission spectrometry (GB/T 4702.6);
- Determination of Chromium and Nitrogen Content by Distillation Separation - Nessler Reagent Spectrophotometry (GB/T 4702.7);
- Chemical Analysis Methods for Chromium Metals. Determination of Arsenic Content by Distillation-Molybdenum Blue Spectrophotometry (GB/T 4702.8);

- Chemical Analysis Methods for Chromium Metals. Determination of Antimony Content by Crystal Violet Spectrophotometry (GB/T 4702.9);
- Chemical Analysis Methods for Chromium Metals. Determination of Copper Content by Copper Reagent Spectrophotometry (GB/T 4702.10);
- Chemical Analysis Methods for Tin Content Determination by Alizarin Violet Spectrophotometry (GB/T 4702.11)
- Chemical analysis method for chromium metal. Determination of carbon content by infrared absorption method (GB/T 4702.14);
- Determination of the content of metallic chromium, lead, tin, bismuth, antimony and arsenic by inductively coupled plasma mass spectrometry (GB/T 4702.15);
- Determination of Chromium-Sulfur Content by Infrared Absorption Method and Combustion Neutralization Titration Method (GB/T 4702.16);
- Determination of the content of chromium, oxygen, nitrogen, and hydrogen in metallic chromium using inert gas melting infrared absorption and thermal conductivity methods (GB/T 4702.17);
- Determination of Chromium and Vanadium Content by Tantalum Reagent Chloroform Extraction Spectrophotometric Method (GB/T 4702.18).

This document replaces GB/T 4702.16-2008 "Determination of Chromium and Sulfur Content in Metals by Infrared Absorption Method and Combustion Neutralization Titration Method".

Compared with GB/T 4702.16-2008, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The measurement range of infrared absorption spectrometry has been changed (see Chapter 1, Chapter 1 of the 2008 edition);
- b) A tungsten-tin flux was added (see 4.2.6);
- c) The description of instrument stability requirements has been revised (see 4.3.1, 3.3.1 in the 2008 version);
- d) The sample particle size was changed (see 4.4, 3.4 in the 2008 edition);
- e) The number of measurements was increased (see 4.5.1);
- f) The sample quantity has been changed (see 4.5.2, 3.5.1 in the 2008 version);
- g) Added requirements for measuring sulfur content less than 0.001% in the blank test (see 4.5.3);
- h) The description of the analysis preparation steps has been changed (see 4.5.4.4, 3.5.3.4

in the 2008 version);

i) Added calibration test content (see 4.5.5);

j) The amount of flux added has been changed (see 4.5.6, 3.5.5 in the 2008 version);

k) The representation of the analysis results has been added (see 4.6);

l) The precision has been changed (see 4.7, 3.6 in the 2008 edition);

m) Increased the number of determinations in the combustion neutralization titration method (see 5.5.1);

n) A normative appendix, "Flowchart of the Test Analysis Result Acceptance Procedure", has been added (see Appendix A).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Iron and Steel Association.

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This document was first published in 1988, revised for the first time in 2008, and this is the second revision.

Introduction

Because the detection of chromium metal involves many elements, and the applicable scope and methods for each element differ, in order to ensure...

The convenience and accuracy of chromium metal testing standards are evident in our analytical methods for different elements within chromium, which have established national standards to support chromium metal testing.

The national standard system. GB/T 4702, the series of analytical methods for metallic chromium, is the basic standard for the detection of metallic chromium in China, consisting of 16 parts. However...

Some parts have been discontinued, so please be careful when using them.

- Determination of Chromium Content in Metallic Chromium. Ferrous Ammonium Sulfate Titration Method (GB/T 4702.1). The purpose is to determine the chromium content in metallic chromium.

The amount was determined by titration with ferrous ammonium sulfate.

- Determination of Silicon Content in Metallic Chromium using the Perchloric Acid Gravimetric Method (GB/T 4702.2). The purpose is to determine the silicon content in metallic chromium.

The amount was determined by the perchloric acid gravimetric method.

- Determination of Phosphorus Content in Metallic Chromium. Bismuth-phosphorus-molybdenum blue spectrophotometric method (GB/T 4702.3). The purpose is to measure phosphorus content in metallic chromium.

The content was determined using the bismuth phosphomolybdenum blue spectrophotometric method.

- Determination of chromium and iron content by disodium ethylenediaminetetraacetate titration and flame atomic absorption spectrometry (GB/T 4702.4).

The purpose was to measure the iron content in metallic chromium using disodium ethylenediaminetetraacetate titration and flame atomic absorption spectrometry.

- Determination of Chromium and Aluminum Content by Disodium Ethylenediaminetetraacetate Titration and Flame Atomic Absorption Spectrometry (GB/T 4702.5).

The purpose was to measure the aluminum content in metallic chromium using disodium ethylenediaminetetraacetate titration and flame atomic absorption spectrometry.

- Determination of the content of metallic chromium, ferrochrome, aluminum, silicon and copper by inductively coupled plasma atomic emission spectrometry (GB/T 4702.6).

The key is to measure the iron, aluminum, silicon and copper content in metallic chromium using inductively coupled plasma atomic emission spectrometry.

- Determination of Chromium and Nitrogen Content by Distillation Separation - Nessler