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GB/T 4698.26-2024

Methods for chemical analysis of titanium sponge, titanium and titanium alloys-Part 26: Determination of tantalum and tungsten content-Inductively coupled plasma atomic emission spectrometry

海绵钛、钛及钛合金化学分析方法 第26部分：钽和钨含量的测定 电感耦合等离子体原子发射光谱法

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Table of Contents

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is part 26 of GB/T 4698 "Chemical analysis methods for titanium sponge, titanium and titanium alloys". GB/T 4698 has been published. The following parts.

- Part 1: Determination of copper content - Flame atomic absorption spectrometry;

- Determination of iron content (GB/T 4698.2);

- Part 3: Determination of silicon content - Molybdenum blue spectrophotometric method;

- Part 4: Determination of manganese content - Periodate spectrophotometry and inductively coupled plasma atomic emission spectrometry;

- Part 5: Determination of molybdenum content - Thiocyanate spectrophotometry and inductively coupled plasma atomic emission spectrometry;

- Part 6: Determination of boron content - Methylene blue spectrophotometric method and inductively coupled plasma atomic emission spectrometric method;

- Determination of oxygen and nitrogen content (GB/T 4698.7);

- Part 8: Determination of aluminum content - Alkali separation-EDTA complexometric titration and inductively coupled plasma atomic emission spectrometry;

- Part 9: Determination of tin content - Potassium iodate titration and inductively coupled plasma atomic emission spectrometry;

- Part 10.Determination of chromium content by ammonium ferrous sulfate titration and inductively coupled plasma atomic emission spectrometry (containing vanadium);

- Determination of chromium content (excluding vanadium) by titration with ammonium ferrous sulfate (GB/T 4698.11);

- Part 12.Determination of vanadium content by ammonium ferrous sulfate titration and inductively coupled plasma atomic emission spectrometry;

- Part 13.Determination of zirconium content - EDTA complexometric titration and inductively coupled plasma atomic emission spectrometry;

- Determination of carbon content (GB/T 4698.14);

- Determination of hydrogen content (GB/T 4698.15);

- Part 17.Determination of magnesium content - Flame atomic absorption spectrometry;

- Part 18.Determination of tin content - Flame atomic absorption spectrometry;

- Part 19.Determination of molybdenum content - Thiocyanate differential photometry;

- Part 21.Determination of manganese, chromium, nickel, aluminium, molybdenum, tin, vanadium, yttrium, copper and zirconium content - Atomic emission spectrometry;

- Part 22.Determination of niobium content - 5-Br-PADAP spectrophotometry and inductively coupled plasma atomic emission spectrometry;

- Part 23.Determination of palladium content - Stannous chloride-potassium iodide spectrophotometric method and inductively coupled plasma atomic emission spectrometric method;

- Part 24.Determination of nickel content - Dimethylglyoxime spectrophotometric method and inductively coupled plasma atomic emission spectrometric method;

- Part 25.Determination of chlorine content - Silver chloride spectrophotometric method;

- Part 26.Determination of tantalum and tungsten content - Inductively coupled plasma atomic emission spectrometry;

- Part 27.Determination of neodymium content - Inductively coupled plasma atomic emission spectrometry;

- Part 28.Determination of ruthenium content - Inductively coupled plasma atomic emission spectrometry;

- Part 29.Determination of aluminum, carbon, chromium, copper, iron, manganese, molybdenum, nickel, silicon, tin, vanadium and zirconium content - Photoelectric direct reading spectrometry.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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Introduction

Titanium alloys have the characteristics of high specific strength, good corrosion resistance, heat resistance, low temperature resistance, etc., and are widely used in aviation, aerospace, nuclear energy, weapons and equipment, and marine applications.

Inductively coupled plasma atomic emission spectrometry (ICP-AES) is a method for the analysis of the molecular weight of a substance in a given volume, with high sensitivity, good precision, wide linear range, and It can perform multiple element analyses simultaneously and has high detection efficiency, and has been widely used in the determination of element content in titanium and titanium alloys.

GB/T 4698 aims to establish the chemical analysis methods for titanium sponge, titanium and titanium alloys and consists of the following parts.

- Part 1: Determination of copper content - Flame atomic absorption spectrometry. The purpose is to establish a method for the determination of copper content.

- Part 2: Determination of iron content. The purpose is to establish a method for the determination of iron content.

- Part 3: Determination of silicon content - Molybdenum blue spectrophotometric method. The purpose is to establish a method for the determination of silicon content.

- Part 4: Determination of manganese content - Periodate spectrophotometry and inductively coupled plasma atomic emission spectrometry.

To establish a method for the determination of manganese content.

- Part 5: Determination of molybdenum content by thiocyanate spectrophotometry and inductively coupled plasma atomic emission spectrometry.

To establish a method for the determination of molybdenum content.

- Part 6: Determination of boron content Methylene blue spectrophotometry and inductively coupled plasma atomic emission spectrometry.

To establish a method for determining boron content.

- Part 7: Determination of oxygen and nitrogen content. The purpose is to establish the determination method of oxygen and nitrogen content.

- Part 8: Determination of aluminum content - Alkali separation-EDTA complexometric titration and inductively coupled plasma atomic emission spectrometry.

The purpose is to establish a method for determining aluminum content.

- Part 9: Determination of tin content Potassium iodate titration and inductively coupled plasma atomic emission spectrometry. The purpose is to establish Method for determination of tin content.

- Part 10.Determination of chromium content - Ammonium ferrous sulfate titration and inductively coupled plasma atomic emission spectrometry (containing vanadium).

The purpose is to establish a method for determining chromium content.

- Part 11.Determination of chromium content (excluding vanadium) by titration with ammonium ferrous sulfate. The purpose is to establish a method for the determination of chromium content.

- Part 12.Determination of vanadium content by ammonium ferrous sulfate titration and inductively coupled plasma atomic emission spectrometry.

Establish a method for the determination of vanadium content.

- Part 13.Determination of zirconium content EDTA complexometric titration and inductively coupled plasma atomic emission spectrometry.

To establish a method for the determination of zirconium content.

- Part 14.Determination of carbon content. The purpose is to establish a method for the determination of carbon content.

- Part 15.Determination of hydrogen content. The purpose is to establish a method for the determination of hydrogen content.

- Part 17.Determination of magnesium content - Flame atomic absorption spectrometry. The purpose is to establish a method for the determination of magnesium content.

- Part 18.Determination of tin content - Flame atomic absorption spectrometry. The purpose is to establish a method for the determination of tin content.

- Part 19.Determination of molybdenum content - Thiocyanate differential photometry. The