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YS

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

YS/T 508-2008

Replacing YS/T 508-2006

**Method for chemical analysis of tungsten-molybdenum alloy.
The EDTA volumetric method for the determination of
molybdenum content**

钨钼合金化学分析方法EDTA容量法测定钼量
(English Translation)

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Foreword

Instead of the standard YS /"Determination of tungsten and molybdenum chemical analysis of molybdenum content - EDTA volumetric method" T 508-2006 (formerly GB/T 3825-1983).

This standard YS/T 508-2006 comparison, the following main changes.

--- "3 reagent" added ammonium persulfate, nitric acid, hydrochloric acid, chrome black T and its preparation method, bromocresol green ethanol solution formulation party Method and requirements;

--- Quality of the original solution - volume concentration unit "%" was changed to "g/L";

--- The "3.17 bismuth nitrate standard solution" in the amount of nitric acid increased from 50mL to 80mL, the concentration of the solution is about the medium of nitric acid from about 0.2mol/L increased to about 0.3mol/L;

--- Consider sample lysis time, the "4.1" in the "100-mesh (149μm)" to "over 125μm (120 mesh)";

--- If dissolving a sample is placed into the cooling, the solution will be fully crystallize, is not conducive to test operation, it will be "5.3.2" in the "cooling" to "Coolish";

--- 5.3.2 in the "stirring solution of 10mL ~ 15mL ammonium hydroxide (3.4)" is replaced by "stirring solution of 10mL ~ 15mL ammonium hydroxide (3.4) until the solution is clear ";

--- 5.3.7 in the "coolish" to "cool down";

--- The standard formula was standardized revised to instructions, eliminating the original formula of ambiguity;

--- Increasing the foreword, precision and quality assurance and control content.

This standard by the National Standardization Technical Committee of non-ferrous metals and centralized.

This standard by the Baoji Titanium Group Ltd., Baoji Titanium Industry Co., Ltd. is responsible for drafting.

This standard by Western Metal Materials Co., Ltd., Luoyang Luanchuan Molybdenum Co., Ltd. participated in the drafting.

1 Scope

This standard specifies the method for determination of tungsten and molybdenum alloys molybdenum content.

This standard applies to the determination of tungsten and molybdenum alloy molybdenum content. Measurement range. 20% to 80%.

2 Principle of the method

Samples with sulfuric acid - ammonium sulfate dissolved, hydroxylamine hydrochloride in weak acid solution reducing pentavalent molybdenum and accurate addition of excess EDTA standard Solution, pentavalent molybdenum and EDTA 1:1 generate stable complex ($pK = 28$), and then to drop back bismuth nitrate standard solution excess of EDTA, no tungsten Interfere with the determination.

3 Reagents

Unless otherwise indicated, this standard reagents used were of analytical grade, the water is distilled water or equivalent water.

3.1

ammonium sulfate.

3.2

sulfate ($\rho = 1.84\text{g/mL}$).

3.3

sulfate (1 + 1).

3.4

ammonium hydroxide ($\rho = 0.90\text{g/mL}$).

3.5

ammonium hydroxide (1 + 1).

3.6

hydroxylamine hydrochloride solution (100g/L).

3.7

ammonium sulfate solution (250g/L).

3.8

ammonium persulfate solution (10g/L), the time is now equipped with.

3.9

HCl (1 + 1).

3.10

nitric acid (1 + 1).

3.11

chrome black T solution (5g/L). Weigh 0.5g chrome black T and 2g hydroxylammonium hydrochloride, dissolved in an appropriate amount of ethanol (95%), followed by ethanol (95%) Diluted to 100mL, the time is now equipped with.

3.12

bromocresol green ethanol solution (2g/L). Weigh 0.2g bromocresol green dissolved in an appropriate amount of ethanol (95%), followed by ethanol (95%) diluted to 100mL.

3.13

XO solution (1g/L).

3.14

ammonium chloride - ammonium hydroxide buffer solution (pH10). Weigh 67g ammonium chloride, dissolved in 200mL water, and 570mL ammonium hydroxide (3.4), diluted with water to 1000mL, and mix.

3.15

Zinc standard solution. Weigh 1.0000g zinc metal ($\geq 99.9\%$), placed in 200mL beaker, add 10mL of hydrochloric acid (3.9), to be After complete dissolution, heated to boiling for a few minutes, cooled and transferred to 1000mL volumetric flask, dilute with water to volume, and mix. This solution containing 1mL 1.0mg zinc.

3.16

disodium ethylenediamine tetraacetate (EDTA) standard solution. Weigh 37.23g Disodium ethylenediaminetetraacetate dihydrate 400mL beaker was placed Added 200mL of water, dissolved by heating and transferred to 2000mL volumetric flask, dilute with water to volume, and mix.

Calibration. Pipette 25.00mL standard zinc solution (3.15), placed in 250mL Erlenmeyer flask and then with ammonium hydroxide (3.5) was adjusted to weak alkaline, Added 10mL ammonium chloride - ammonium hydroxide buffer solution (3.14) and diluted with water to approximately 80mL, add 5 drops of chrome black T solution (3.11), Titration with EDTA standard solution to the solution from purple to light blue is the end.