ICS 27.120.30
CCS F46

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 11848.7-2025

Replacing GB/T 11848.7-1989

Methods for analysis of uranium ore concentrate - Part 7: Determination of halides - Volhard titration

铀矿石浓缩物分析方法 第7部分：卤素的测定 伏尔哈德法

Issued on: October 5, 2025 **Implemented on: May 1, 2026**

Issued by: State Administration for Market Regulation;
Standardization Administration of China

Table of Contents

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 7 of GB/T 11848, "Analytical Methods for Uranium Ore Concentrates". GB/T 11848 has already published the following parts.

1.Determination of Uranium by Ferrous Sulfate Reduction-Potassium Dichromate Titration;

2.Determination of Nitric Acid-Insoluble Uranium by Spectrophotometry;

3.Gravimetric determination of extractable organic compounds;

4.Determination of Arsenic and Mercury by Hydride Generation-Atomic Fluorescence Spectrometry;

5.Determination of Carbonate by Infrared Absorption Spectroscopy;

6.Determination of Fluorine by Ion-Selective Electrode Method;

7.Determination of Halogens - Volhard Method;

8.Determination of Moisture Content by Gravimetric Method;

9.Determination of Silicon by Spectrophotometry;

10.Determination of Sulfur by Infrared Absorption Spectroscopy;

11.Determination of Thorium by Inductively Coupled Plasma Mass Spectrometry;

12.Determination of Boron by Inductively Coupled Plasma Mass Spectrometry;

1 Scope

GB/T 11848.7-2025 is the Chinese national standard on methods for analysis of uranium ore concentrate - part 7: determination of halides - volhard titration, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not

compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 5 October 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2026. Classification: ICS 27.120.30, CCS F46. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes a method for determining halogens (excluding fluorine) in uranium ore concentrates. This document applies to the determination of total halogens (excluding fluorine) in uranium ore concentrates. Measurement range. 0.025%~5%.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 6682 Specifications and test methods for water used in analytical laboratories

GB/T 10268 Uranium Ore Concentrates

3 Terms and Definitions

The terms and definitions defined in GB/T 10268 apply to this document.

4.Principles After the sample is decomposed by heating with dilute nitric acid, an excess of silver nitrate standard solution is added. Cl-, Br-, I- react with Ag to form silver halide precipitate. Ferric ammonium sulfate was used as an indicator, and excess silver nitrate was titrated with potassium thiocyanate standard solution. The halogen content in the sample was expressed as chlorine.

5.Reagents or materials Unless otherwise specified, all reagents used were of analytical grade. The water used in the experiments met the Class III water standard specified in GB/T 6682.

5.1 Nitric acid, rho=1.42g/mL.

5.2 Nitric acid solution. phinitric acid : water = 1 : 4.

5.3 Silver nitrate standard solution, c=0.0500mol/L, standard substance/standard sample.

5.4 Ferric ammonium sulfate.

5.5 Ferric ammonium sulfate solution. Weigh 50g of ferric ammonium sulfate (5.4), place it in a 500mL beaker, add.200mL of water, and heat at approximately 80°C. Dissolve. Add nitric acid (5.1) dropwise while stirring until the solution changes color from brown to pale yellow.

5.6 Potassium thiocyanate.

7 Determination of Halogens - Volhard Method Warning

---Personnel using this document should have practical experience working in a formal laboratory. This document does not address all possible safety issues. Users are responsible for taking appropriate safety and health measures and ensuring compliance with relevant national regulations. This document covers the following. Toxic and hazardous waste should be collected and stored centrally, and all types of waste should be managed responsibly in strict accordance with the relevant regulations and technical standards of the national environmental protection administration. Centralized processing.