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

GB/T 42487-2023

**Soil quality - Determination of nitrate, nitrite and ammonium in soils -
Extraction with potassium chloride solution and determination using
automated method with segmented flow analysis**

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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 modified to adopt ISO 14256-2.2005 "Soil Quality Determination of Nitrate Nitrogen and Nitrite in Fresh Soil by Extraction of Potassium Chloride Solution"

Nitrogen and Ammonium Nitrogen Part 2. Automated Flow Analysis.

A chapter "Terms and Definitions" has been added to this document.

The technical differences between this document and ISO 14256-2.2005 and their reasons are as follows.

--- Replaced ISO 3696 (see 5.1) with the normatively quoted GB/T 6682 to adapt to my country's technical conditions and improve operability;

--- Increased the purity requirements of reference substances (see 5.6, 5.7 and 5.10) to improve accuracy;

--- Changed the amount of reference substances used (see 5.23, 5.24 and 5.25) to improve accuracy;

--- Changed the reagent preparation process (see 5.28, 5.29, 5.31 and 5.32) to improve the

standardization of preparation operations;

--- Increased the use of commercial copper-plated cadmium grains (see 5.30) to improve the convenience of application;

--- Changed the requirements on flow chart adjustment (see 6.7, 6.8 and 6.9) to meet the requirements of GB/T 1.1-2020.

The following editorial changes have been made to this document.

---Change the name of the standard to "Soil Quality Soil Nitrate Nitrogen, Nitrite Nitrogen and Ammonium Nitrogen Determination

Analysis method";

--- Deleted the footnote about the reagent polyoxyethylene lauryl ether;

--- Deleted the suspension paragraph between Chapter 5 and 5.1 of ISO /T S14256-1.2003;

--- Added the explanation of the symbol on the left side of the equal sign in the formula and the note about the calculation formula.

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

This document was proposed by the Ministry of Agriculture and Rural Affairs of the People's Republic of China.

This document is under the jurisdiction of the National Soil Quality Standardization Technical Committee (SAC/TC404).

1 Scope

This document describes the determination of nitrate nitrogen, nitrite nitrogen and ammonium nitrogen in fresh soil samples by leaching with 1 mol/L potassium chloride solution.

flow analysis method.

This document is applicable to all types of soil samples that have been homogeneously mixed by appropriate means.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is

applicable to

this document.

GB/T 6682 Analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696:1987, MOD)

ISO 11465 Soil quality Determination of soil dry matter and moisture content Gravimetric method (Soil quality-Determination)

3 Terms and Definitions

This document does not have terms and definitions that need to be defined.

4 principles

The uniformly mixed soil samples were leached with 1mol/L potassium chloride solution, and the nitrate in the solution was determined by an automated flow analysis system.

The concentration of nitrogen, nitrite nitrogen and ammonium nitrogen.

Note. The determination method in this document is based on the flow analysis system, both flow injection and continuous flow analysis systems are applicable.

5 reagents

Unless otherwise stated, all reagents in this document are of analytical grade.

5.1 Experimental water, the electrical conductivity at 25°C is not higher than 0.1mS/m, which meets the second-grade water in GB/T 6682.