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

GB/T 46742-2025

**Simultaneous determination of N-(n-Buthyl)thiophosphoric
triamide and dicyandiamide in fertilizers - High performance
liquid chromatography method**

肥料中正丁基硫代磷酰三胺和双氰胺的同时测定 高效液相色谱法

(English Translation)

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Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Principles

Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting is scheduled.

This document is modified to adopt ISO 6650:2023, "Fertilizers, Beneficial Substances and Soil Conditioners - Simultaneous Determination of n-Butyl by High Performance Liquid Chromatography".

Thiophosphoryltri-amine and dicyandiamide.

Compared with ISO 6650:2023, this document has undergone the following structural adjustments.

--Added a reduction tool (see 6.5);

--Section 8.2.1 of ISO 6650:2023 has been deleted, and the subsequent clause numbers have been moved forward;

--Appendix B of ISO 6650:2023 has been deleted.

The technical differences between this document and ISO 6650:2023, and the reasons therefor, are as follows.

--The preparation methods for NBPT and DCD standard stock solutions have been modified (see 5.4) to make the operating procedures more consistent with...

Basic operational practices in analytical chemistry;

--An instrument reduction device has been added (see 6.5), ISO 8358 is now obsolete;

--The obsolete normative reference ISO 8358 has been removed, and two methods of abbreviation have been used instead (see 7.2). ISO 8358 it is now abolished;

--The description of the sample in 7.3 "Sample Solution Preparation" has been deleted to

make the operation steps cover both solid and liquid samples;

--Change "should use" to "preferably use" in the description of the instrument's characteristic absorption wavelength in sample solution determination (see 7.5.2) for easier labeling.

Prospective users should operate the equipment according to its characteristics;

--The clause "c) Refer to the specific test method used in this document" in Chapter 9, "Test Report," has been deleted. It is now required to include the document number.

The specific testing method needs to be further specified;

--The category of Appendix A has been changed from "normative" to "informative" (see Appendix A), which is more in line with the category of the content in that appendix.

The following editorial changes have been made to this document.

--The standard name has been changed to "Simultaneous Determination of n-Butylthiophosphoric triamine and Dicyandiamide in Fertilizers by High Performance Liquid Chromatography";

--The footnote about the CAS number has been removed;

--The informative appendix "International Interlaboratory Comparison Test Report" has been deleted.

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 Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Fertilizers and Soil Conditioners (SAC/TC 105).

1 Scope

This document describes the simultaneous determination of n-butylthiophosphoric triamine (NBPT) and dicyandiamide in fertilizers using high performance liquid chromatography (HPLC).

Methods for determining (DCD) content.

This document applies to the determination of n-butylthiophosphoric triamine (NBPT) and dicyandiamide (DCD) in fertilizers.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below.

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.

ISO 3696 Water for analytical laboratory use - Specification and test methods and test methods) Note. GB/T 6682-2008 Specifications and test methods for water used in analytical laboratories (ISO 3696:1987, MOD) ISO 8157 Terminology for Fertilizers, Soil Conditioners and Beneficial Substances (stances-Vocabulary) Note. GB/T 6274-2025 Fertilizers, Soil Conditioners and Beneficial Substances - Terminology (ISO 8157:2022, MOD)

3 Terms and Definitions

The terms and definitions defined in ISO 8157 and the following terms and definitions apply to this document.

The URLs for the terminology databases used by ISO and IEC for standardization are as follows.

N-(n-butyl)thiophosphoric triamide; NBPT A white crystalline solid used in agriculture, which has important commercial and practical value.

Note: CAS number. 94317-64-3.

Dicyandiamide (DCD)

2-Cyanoguanidine

It is a nitrification inhibitor and also a slow-release nitrogen source with a water solubility of 4% to 5%.

Note: Molecular formula. C₂H₄N₄ (CAS No.. 461-58-5).

4 Principles

This analytical method is based on the principle of high performance liquid chromatography and utilizes ultraviolet characteristic absorption to detect the separated compounds.