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

GB/T 31270.16-2025

Replacing GB/T 31270.16-2014

**Test guidelines on environmental safety assessment for
chemical pesticides - Part 16: Soil microorganism toxicity test**

化学农药环境安全评价试验准则 第16部分：土壤微生物毒性试验

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Standardization Administration of the PRC**

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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 16 of GB/T 31270, "Test Guidelines for Environmental Safety Evaluation of Chemical Pesticides". GB/T 31270 has been published. The following section.

- 1.Soil Metabolism Test;
- 2.Hydrolysis Test;
- 3.Photolysis Experiment;
- 4.Soil Adsorption/Desorption Tests;
- 5.Soil Leaching Test;
- 6.Volatility Testing;
- 7.Bioaccumulation Assays;
- 8.Metabolic Experiments of Water-Sediment Systems;
- 9.Short-term feeding toxicity tests in birds;
- 10.Acute toxicity tests on bees;

11.Acute toxicity test on silkworms;

12.Acute Toxicity Testing in Fish;

1 Scope

GB/T 31270.16-2025 is the Chinese national standard covering the effect of a pesticide on soil microbial function - the nitrogen and carbon transformation tests over 28 days, the soils used, and the deviation from the untreated control beyond which the effect is judged unacceptable. Part 16 of the series. It replaces GB/T 31270.16-2014, in force from 1 May 2026. Issued on 5 October 2025, it has been in force since 1 May 2026, replacing GB/T 31270.16-2014.

This document describes the soil microbial toxicity test method for environmental safety assessment of chemical pesticides. This document applies to soil microbial toxicity testing conducted for the registration of chemical pesticides.

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 39228 Determination of soil microbial biomass - Fumigation extraction method LY/T

1215 Determination of soil moisture and physical properties in forests LY/T 1225

Determination of particle size distribution (mechanical composition) of forest soils LY/T

1243 Determination of Cation Exchange Capacity in Forest Soils

NY/T 1121.2 Soil Testing - Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Microorganisms degrade nitrogen-containing organic matter into inorganic end products, nitrates, through ammoniation and nitrification.

4.Principles The addition of the test substance may inhibit or promote ammonification and nitrification by soil microorganisms, thereby affecting the degradation of nitrogen-containing organic matter in the soil. It is a nitrate. The test substance was added to test soil mixed with an appropriate amount of organic substrate for treatment, and then cultured under certain conditions. At a certain time interval, samples were periodically taken and the nitrate

content in the treatment group and the control group was measured to compare the nitrogen conversion between the two groups. Differences in conversion rates are used to determine whether the test substance has a long-term effect on nitrogen transformation in the soil.

6 Determination of Soil Organic Matter

NY/T 1121.24 Soil Testing - Part

24.Determination of Total Nitrogen in Soil - Automated Nitrogen Analyzer Method

NY/T 2882.8 Guidelines for Environmental Risk Assessment of Pesticide Registration - Part

16 Soil Microbial Toxicity Testing 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.