

ICS 65.100
CCS G23



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

GB/T 1601-2023

Replacing GB/T 1601-1993

Determination method of pH value for pesticides

农药pH值的测定方法

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020, Directives for standardization - Part

1. Rules for the structure and drafting of standardizing documents. This document replaces GB/T 1601-1993, Determination method of pH value for pesticides; compared with GB/T 1601-1993, in addition to structural adjustments and editorial modifications, the main technical changes are as follows:

- a) Change the scope of application (see Chapter 1; Chapter 1 of the 1993 edition);
- b) Add terms and definitions (see Chapter 3);
- c) Add the general provisions (see 4.1);
- d) Change the method summary (see 4.2; Chapter 3 of the 1993 edition);
- e) Add pH standard buffer solution and pH reference reagent (see 4.3.1 and 4.3.2);
- f) Delete potassium hydrogen phthalate pH standard solution and sodium tetraborate pH standard solution (see 4.3 of the 1993 edition);
- g) Change the description of instrument electrodes (see 4.4.2; 5.3 of the 1993 edition);
- h) Change the calibration of the pH meter (see 4.5.1;

6.1 of the 1993 edition);

1 Scope

GB/T 1601-2023 is the Chinese national standard on determination method of pH value for pesticides, in the field of agriculture. 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 7 September 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 April 2024.

Classification: ICS 65.100, CCS G23. 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 determination method of pH value for pesticides. This document applies to the determination of pH value for pesticide (technical concentrate) and preparation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB/T 8170-2008, Rules of rounding off for numerical values & expression and judgment of limiting values

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 pH value The negative logarithm of hydrogen ion activity expressed in mol/L.

4 Test method

Warning. Personnel using this document shall have practical experience in laboratory work. This document does not address all safety concerns. It is the user's responsibility to take appropriate safety and health measures.

4.1 General provisions The judgment of the inspection results shall be carried out in accordance with the provisions of

4.3.3 in GB/T 8170-2008.

4.2 Method summary Use a pH meter to measure the pH of the aqueous sample solution or undiluted water- based preparation.

4.3 Reagents and solutions

4.3.1 pH standard buffer solution. Either commercial pH standard buffer solution, or self-prepared pH reference reagent can be used. The preparation process is carried out in accordance with Appendix A.

4.4 Apparatus

4.4.1 pH meter. with temperature compensation function, available for at least two- point calibration.

4.5 Test steps

4.5.1 Calibration of pH meter According to the instructions for use of the pH meter, select an appropriate standard buffer solution to calibrate the pH meter at least two points, so that the pH value of the sample solution is between the two points.

4.5.2 Determination of pH value

4.5.2.1 Dilution method (applicable to all pesticide products) 4.5.2.1.1 Preparation of sample solution Weigh

1.0 g (accurate to

0.001

g) of the sample; place it in a 100 mL stoppered measuring cylinder containing 50 mL of water; then, use water to make up to 100 mL; shake vigorously until the sample is fully mixed or dispersed; then, transfer to a 200 mL beaker; let stand for 1 minute.

Appendix A

(Normative) pH standard buffer solution A.1 Preparation of pH standard buffer solution

A.1.1 Oxalate pH standard buffer solution. Weigh

12.71 g (accurate to

0.001

g) of potassium trihydrogen oxalate that has been baked to constant weight at $54\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$; place it in a 1 000 mL volumetric flask; use water to dissolve it and dilute it to the mark; shake well. A.1.4 Disodium tetraborate pH standard buffer solution. Weigh

19.07 g (accurate to

0.001

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