

ICS 65.100
CCS B 17



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

GB/T 13917.9-2026

Replacing GB/T 13917.9-2009

**Laboratory efficacy test methods and criteria for public health
insecticides for pesticide registration - Part 9: Repellents**

农药登记用卫生杀虫剂室内药效试验及评价 第9部分：驱避剂

Issued on: April 30, 2026

Implemented on: November 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

- 4 Test materials
- 6 Test Methods
- 6.2 Repellent Test
- 8 Evaluation Indicators
- 9 Repellents

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 9 of GB/T 13917 "Indoor Efficacy Tests and Evaluation of Sanitary Insecticides for Pesticide Registration". GB/T 13917 The following sections have been released.

1. Spraying formulations;

4. Mosquito Coils;

5. Electric Mosquito Repellent Mats;

6. Electric Mosquito Repellent Liquid;

8. Powders and Pencils;

10. Simulated Scene This document replaces GB/T 13917.9-2009 "Indoor Efficacy Tests and Evaluation of Sanitary Insecticides for Pesticide Registration - Part

9. Repellents". Compared with GB/T 13917.4-2009, the main technical changes in the "Agent" are as follows, except for structural adjustments and editorial modifications.

a) The term and definition of "repellent" have been added (see 3.1);

b) Increased requirements for the test reagents (see 4.1);

c) The requirements for the test targets have been changed (see 4.2, Chapter 2 of the 2009 edition);

d) The test method was changed (see Chapter 6, Chapter 4 of the 2009 edition);

e) The number of significant digits in the calculation results has been changed (see Chapter 7, Chapter 5 in the 2009 edition);

4 Test materials

4.1 Test reagents Please specify the generic name or code of the drug in Chinese/English, dosage form, content of active ingredient, manufacturer, production date or batch number, etc.

4.2 Test Target *Aedes albopictus* mosquitoes were reared according to the method in NY/T 1964.3, and test insects were selected on the 5th day after emergence. Day 7, non-blood-feeding female adult worms weighing

5. Instruments and Equipment Mosquito cage, 400mm long, 300mm wide, and 300mm high.

6 Test Methods

6.1 Test Conditions Temperature. $(26 \pm 2)^{\circ}\text{C}$. Relative humidity. $(65 \pm 10)\%$.

6.2 Repellent Test

6.2.1 Attack Power Test 300 test insects were placed in a mosquito cage. The tester's hand had 40mm x 40mm of skin exposed on the back of their hand, with the rest completely covered. The hand was then placed inside the cage. Observe the mosquitoes landing inside the mosquito cage. When a mosquito lands on an exposed surface and makes a biting motion, immediately shake your arm to drive it away; record this as a successful mosquito landing. One test. Testers and test insects whose insects land more than 30 times within 2 minutes are deemed to have passed the attack capability test. Testers and insects with passed the attack capability test... Only then can the avoidance test be conducted.

6.2.2 Avoidance Test Select four or more test subjects with qualified attack power (half male and half female, and they should not drink alcohol, tea, or coffee before or during the test). (Using fragrance-containing products), mark a 50mm x 50mm area in the center of the skin on the back of each hand, and apply $1.5\text{mg}/\text{cm}^2$ to each hand. Apply the ointment-based repellent or $1.5\text{ }\mu\text{L}/\text{cm}^2$ (liquid repellent) evenly to the marked area, exposing a 40 mm x 40 mm section of skin. Skin was covered, the rest of the hand was concealed, and the other hand served as a blank control. Two hours after applying the repellent, the hand was immersed in a mosquito cage with adequate attack power for 2 minutes. Observe whether mosquitoes come to land and suck blood. Then, test every hour; if mosquitoes come to suck blood within 2 minutes, the attempt to repel them has failed. Record the effective protection time (h) of the repellent. For each test, first perform an attack test using a control hand; if the insect's attack strength is satisfactory, continue the test. If the insect's attack power is insufficient, a qualified test insect must be used and the test repeated.

7. Calculation The effective protective time of the test drug in 4 or more subjects is added together, and the average of the sums (rounded to two decimal places) is taken as the protective time of the drug. Protection time (H). Protection time H is calculated according to

formula (1).

8 Evaluation Indicators

The efficacy of the repellent was evaluated based on the duration (in hours) of protection provided to the test subjects. If the protection time was greater than or equal to

4.00 hours, the tested product... qualified.

9 Repellents

1.Scope This document describes the indoor efficacy testing methods and evaluation of test results for pesticide repellents for pesticide registration. This document applies to the efficacy determination and evaluation of repellents against biting and bothersome mosquitoes during pesticide registration.