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**Guidelines for storage stability testing of pesticides at
ambient temperature**

农药常用储存稳定性试验通则

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Guidelines for storage stability testing of pesticides at ambient temperature

1 Scope

This standard specifies the test methods for the storage stability of pesticides at ambient temperature and the requirements for the preparation of test reports.

This standard applies to the ambient temperature storage stability test for the registration of pesticide formulations.

2 Terms and definitions

The terms and definitions apply to this document.

2.1

Shelf life

The period for ensuring the quality of pesticide products under specified storage conditions. During this period, the appearance of the product, the content of active ingredients, the content of related impurities, the content of other restricted components, other control items and the integrity of the product packaging meet the product technical specifications.

2.2

Relevant impurity

Compared with the effective ingredients of pesticides, the impurities of the pesticide products which are produced during the production or storage process and are obviously toxic to humans and the environment, or cause phytotoxicity to applicable crops, or cause agricultural product pollution, or affect the quality and stability of pesticide products, or cause other adverse effects.

2.3

Raw data

All original records and documents of the testing institution that recorded the original observations and investigation results in a test, or their verified

3.5 Testing items

The items to be tested include appearance, sample quality (including packaging) change rate, active ingredient content and isomer ratio, decomposition product content (when the effective ingredient decomposition rate is greater than 5%), related impurity content, contents of other restricted components (safener, stabilizer, etc.), other necessary control items (see appendix A) of the product and preparations (see Appendix A). If some solid preparations are packaged in soluble bags, appropriate indicators such as solubility and long-lasting foaming of the packaging shall be increased. It shall also be observed whether the packaging is deformed, leaked, or otherwise corroded.

3.6 Testing method

Adopt the relevant project testing methods of pesticide products as published by national standards, industry standards and the International Pesticide Cooperative Analysis Committee (CIPAC), American Association of Analytical Chemists (AOAC) and other international organizations, or confirmed self-developed methods.

4 Test report preparation requirements

The test report shall provide sufficient information, at least include the following:

- a) Sample description. It shall include the name of the product, dosage form, batch number, packaging type (such as cylinder, can, aerosol can), packaging material (such as metal, plastic), net content (mass or volume), sample quantity.
- b) Storage conditions.
 - 1) Storage time: Storage start date.
 - 2) Storage temperature: Monthly average temperature and maximum and minimum temperature.
 - 3) Other storage conditions: Provide control conditions such as humidity and light when necessary.
- c) Testing method. If the testing method adopted is the method of national standard, industry standard, enterprise standard or method recognized by relevant international organizations, it can be directly quoted and give the name and code of the standard or method. If other test methods are used, it shall give complete method and method validation process.
- d) Test process. It shall give detailed description of the test process.

Appendix A

(Normative)

Other control items that shall be determined in pesticide storage stability test at ambient temperature

A.1 Solid preparation

A.1.1 Powder DP

Other control items to be tested for powder include:

- a) Acidity & alkalinity or pH;
- b) Dry seive test.

A.1.2 Dispersible tablet WT

Other control items that shall be tested for dispersible tablets include:

- a) Acidity & alkalinity or pH;
- b) Disintegration time;
- c) Suspension rate;
- d) Wet sieve test;
- e) Wear rate.

A.1.3 Granule GR

Other control items that shall be tested for granules include:

- a) Acidity & alkalinity or pH;
- b) Granularity range;
- c) Dust;
- d) Abrasion resistance (shedding rate or broken rate).

A.1.4 Soluble powder SP

Other control items that shall be tested for soluble powder include:

- a) Acidity & alkalinity or pH;

A.1.9 Milk powder EP

Other control items that shall be tested for milk powder include:

- a) Acidity & alkalinity or pH;
- b) Wetting time;
- c) Wet sieve test;
- d) Dispersion stability.

A.1.10 Emulsion EG

Other control items that shall be tested for emulsions include:

- a) Acidity & alkalinity or pH;
- b) Wetting time;
- c) Dispersion stability;
- d) Wet sieve test;
- e) Dust;
- f) Wear resistance.

A.1.11 Water dispersible granules WG

Other control items that shall be tested for water dispersible granules include:

- a) Acidity & alkalinity or pH;
- b) Suspension rate;
- c) Wet sieve test;
- d) Dispersibility;
- e) Dust;
- f) Wear resistance.

A.2 Liquid preparation

A.2.1 Ultra-low volume liquid UL

Other control items that shall be measured for ultra-low volume liquids include:
Acidity & alkalinity or pH.

- b) Emulsion stability.

A.2.8 Microcapsule suspension agent CS

Other control items that shall be tested for microcapsule suspension agents include:

- a) Contents of free active ingredients;
- b) Acidity & alkalinity or pH;
- c) Wet sieve test;
- d) Suspension rate;
- e) Spontaneous dispersion;
- f) Dumping.

A.2.9 Microcapsule suspension - water emulsion ZW

Other control items that shall be tested for microcapsule suspension - water emulsion include:

- a) Contents of free active ingredient;
- b) Acidity & alkalinity or pH;
- c) Wet sieve test;
- d) Dispersion stability;
- e) Dumping.

A.2.10 Microcapsule suspension - suspension agent ZC

Other control items that shall be tested for microcapsule suspension-suspension include:

- a) Free active ingredient content;
- b) Acidity & alkalinity or pH;
- c) Wet sieve test;
- d) Suspension rate;
- e) Spontaneous dispersion;
- f) Dumping.

- a) Acidity & alkalinity or pH;
- b) Miscibility with hydrocarbon oils.

A.3 Seed treatment preparation

A.3.1 Suspended seed coating agent FSC

Other control items that shall be tested for suspension seed coating agents include:

- a) Acidity & alkalinity or pH;
- b) Wet sieve test;
- c) Suspension rate.

A.3.2 Seed treatment dry powder DS

Other control items that shall be tested for dry seed treatment powder include:

- a) Acidity & alkalinity or pH;
- b) Dry sieve test;
- c) Adhesion.

A.3.3 Seed treatment dispersible powder WS

Other control items that shall be tested for seed treatment dispersible powders include:

- a) Acidity & alkalinity or pH;
- b) Wet sieve test;
- c) Adhesion.

A.3.4 Seed treatment emulsion ES

Other control items that shall be tested for seed treatment emulsion include:

- a) Acidity & alkalinity or pH;
- b) Emulsion stability;
- c) Adhesion.

A.3.5 Seed treatment suspension agent FS

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