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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

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GB/T 1603-2001

Replacing GB 1603-1979 (1988)

**Determination Method of
Emulsion Stability for Pesticide**

农药乳液稳定性测定方法

Issued on: July 13, 2001

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**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine**

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Foreword

This Standard was formulated by reference of Determination Method of Emulsion Stability for Pesticide of WHO and CIPAC, and revision basing on GB/T 1603-1979 (1988) *Determination Method of Emulsion Stability for Pesticide*.

The major technical differences between this Standard and the method of WHO and CIPAC are as follows:

- 1 Sampling quantity is different: both WHO and CIPAC specifies to pipet 5mL of specimen; dilute by 20 times. This Standard takes into account the actual situation in China. Most products are customarily diluted by 200 times. This Concentration is closer to the use concentration, so the provision of pre-revision standard is still retained; the sampling amount is not specified.
- 2 Judgment criteria is different: WHO specifies that oil slick, floating paste and sediment shall be observed after standard for 2h; the specific different products are generally specified to be no more than 2mL. CIPAC specifies that the amounts of oil slick, floating paste and sediment shall be observed at 0.5h, 2h and 24h. FAO adopts the CIPAC method, specifying the maximum amounts of oil slick, floating paste and sediment for specific products. This Standard specifies that if the emulsion does not have oil slick, floating paste and sediment after 1h, then the emulsion stability of the product is qualified.

The major technical differences between this Standard and GB/T 1603-1979(1988) are as follows:

- 1 Expand the use scope of the method; incorporate the water emulsions and microemulsions into the use scope of this Standard.
- 2 Revise the determination temperature from 25°C~30°C to 30°C±2°C.
- 3 Revise the pipette used for pipetting sample from 5mL to the pipette with a scale of 0.02mL.
- 4 For the standard hard water used for test, basing on reserving the preparation method stipulated in the original standard, add the preparation method of hard used in the CIPAC method.

This Standard replaced GB/T 1603-1979 (1988) *Determination Method of Emulsion Stability for Pesticide* since the date of implementation.

This Standard was proposed by National Petroleum and Chemical Industry Bureau Policy and Regulation Division.

Determination Method of Emulsion Stability for Pesticide

1 Scope

This Standard is applicable to the determination of stability for pesticide emulsifiable concentrate, water emulsion, microemulsion, and the other reagent emulsion.

2 Inspection Method

2.1 Method summary

Use standard hard water to dilute the specimen, observe the stability of emulsion after 1h.

2.2 Reagents and solutions

Anhydrous calcium chloride;

Calcium carbonate: bake at 400°C for 2h before use;

Magnesium chloride six crystal water: bake at 200°C for 2h before use;

Hydrochloric acid;

Standard hard water: hardness is 0.342 g/L in terms of calcium carbonate. The preparation method is as follows:

Method I: take 0.304g of anhydrous calcium chloride and 0.139g of magnesium chloride with crystal water into 1000mL volumetric flask; use distilled water to dissolve and dilute to the scale.

Method II: take 2.740g of calcium carbonate and 0.276g of magnesium oxide; use a small amount of 2mol/L hydrochloric acid to dissolve; evaporate to dryness on a water bath to remove excessive hydrochloric acid. Then use the distilled water to completely transfer the residue into a 100mL volumetric flask; use distilled water to dilute to the scale; then take 10mL of such solution into 1000mL volumetric flask; use distilled water to dilute to the scale.

Method III:

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