

ICS 65.100.20
CCS G 25



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

GB 22601-2008

2, 4-D butyl emulsifiable concentrates

2 4-滴丁酯乳油

(English Translation)

Issued on: December 17, 2008

Implemented on: June 1, 2009

Issued by: Standardization Administration of China

Table of Contents

Foreword

1 Scope

2 Normative references

3 Requirements

3.1 Composition and appearance

3.2 Technical Specifications

4.1 Sampling

4.2 Identification Test

4.3 Determination of the mass fraction of 2,4-D butyl ester

4.4 Determination of free phenols

4.5 Determination of Moisture

4.7 Emulsion stability test

4.8 Low temperature stability test

4.9 Thermal storage stability test

4.10 Product inspection and acceptance

5 Marking, labeling, packaging, storage and transportation

Foreword

The standard Chapter 3, Chapter 5 is mandatory, the rest are recommended.

The FAO standards and specifications 1.3/EC/S/F (1992)

"2,4-Destersemulsifiableconcentrates" degree of consistency Non-equivalent.

Appendix A of this standard is an informative annex.

Since the implementation of this standard, the original chemical industry standard HG2320-1992 "2,4- butylate EC" void.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Standardization Technical Committee on Pesticides (SAC/TC133) centralized.

1 Scope

This standard specifies the 2,4-butyl EC requirements, test methods and marking, labeling, packaging, storage and transportation.

This standard applies to the 2,4-D butyl ester original drug and preparation of the emulsifier is dissolved in a suitable solvent 2,4-D butyl EC.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 1600 Determination of Water Pesticides Determination of GB/T 1601 Pesticides pH value GB/T 1603 Determination of emulsion stability of pesticide GB/T 1604 Goods pesticide regulations for acceptance GB/T 1605-2001 Sampling Method commercial pesticides GB/T 4472 chemical product density, relative density measurement General GB 4838 EC pesticide packaging GB/T 19136 Determination of Pesticide Thermal storage stability GB/T 19137 Pesticide cryogenic stability Determination

3.1 Composition and appearance

This product should meet the standards of the original drug 2,4-butyl ester prepared as a homogeneous oily liquid without visible suspended matter and sediment.

3.2 Technical Specifications

2,4-D butyl EC shall comply with the requirements of Table 1.

Table 1 2,4-D butyl EC indicators Control Project

project

index

57% 72% 900g/L 999g/L Butyl 2,4 mass fraction of a /% or 2,4-D butyl ester concentration (20 °C) / (g/L) 57.0 + 2.5-2.5 72.0 + 2.5-2.5 76.0 + 2.5-2.5 + 25-25 900 82.5 + 2.5-2.5 + 25-25 999 Free phenol content (2,4-DCP meter) /% ≤ 0.6 0.8 0.8 0.9 Moisture content /% ≤ 0.8 pH range of 3.0 to 7.0 Emulsion stability (diluted 200 times) Qualified Low temperature stability Qualified b Thermal storage stability b qualified when a dispute occurs when the mass to the mass fraction of arbitration.

b low temperature stability test, the thermal storage stability tests at normal production, at

least every three months, once detected.

Test Method 4

4.1 Sampling

According to GB/T 1605-2001 in "liquid formulations sampling" approach. Determined by sampling a random number table method packages, the final sample size not less than 200mL.

4.2 Identification Test

Gas Chromatography --- The identification test can be carried out simultaneously with the determination of 2,4-D butyl ester content. Under the same chromatographic operating conditions, the test the retention time of the sample solution and the standard solution to a peak of 2,4-D butyl ester peak retention time, the relative difference should be 1.5% Fewer.

4.3.1 Method summary

Sample was dissolved in chloroform, di-isobutyl phthalate as internal standard, the use of polyethylene terephthalate and tetrachlorophthalic Apiezon L is a stainless steel column filler and a flame ionization detector, the sample of 2,4-butyl gas chromatography and measurement set. Determination can also be used by capillary gas chromatography, chromatographic operating conditions given in Appendix A.

4.3.2 Reagents and solutions

Chloroform;

2,4-D butyl standard. a known mass fraction $\geq 98.0\%$;

Internal standard. di-iso-butyl phthalate, should not interfere with the analysis of impurities;

Internal standard solution. Weigh isobutyl phthalate 3.5g, set 250mL flask, add appropriate amount of chloroform was dissolved and diluted to Mark and shake.

4.3.3 Instruments

Gas chromatograph. with a hydrogen flame ionization detector;

Chromatography or chromatography workstation processor;

Column. 2m x 3mm (i.d.) Stainless steel (glass) columns, built-in 1.7% tetrachlorophthalic polyethylene terephthalate and 0.3% Apiezon L/ChromosorbW-AWDMCS180 ~ 250 μ m filler;

Micro injector. 10 μ L.

4.3.4 GC operating conditions

Temperature (°C). Column temperature. 170, 260 gasification chamber, the detector chamber 260;

Gas flow rate (mL/min). carrier gas (N₂) 20, hydrogen gas 30, air 300;

Injection volume. 0.6μL;

Retention time (min). 2,4- 11.0 butylate, internal standard 6.7.

It said operating parameters are typical, according to the characteristics of different instruments, given operating parameters adjusted as appropriate, in order to obtain the best results.

A typical gas chromatogram of 2,4-D butyl EC and the internal standard is shown in Figure 1.

1 --- internal standard;

2 --- 2,4-D ester.

Figure 1 Gas chromatograms butyl 2,4-EC and the internal standard

4.3.5.1 Preparation of standard solution

Weigh 2,4-butyl standard 0.1g (accurate to 0.0002g), placed in a glass bottle stuffed with a pipette 5mL internal standard solution Liquid, shake.

4.3.5.2 Preparation of sample solution

Weigh containing 2,4-D butyl ester 0.1g (accurate to 0.0002g) sample, placed in a glass vial stopper, and 4.3.5.1 with the same Pipette internal standard solution 5mL, shake.

4.3.5.3 Determination

Under these operating conditions, after the instrument is stable, continuous injection of several doses of the standard solution until the two adjacent needle relative peak area of 2,4-butyl After the change is less than 1.2%, according to the solution, the sample solution, the sample solution and standard sequence of the standard solution was measured.

4.3.5.4 Calculation

The ratio measured before and after the two-needle sample solution and two doses of the standard sample solution of 2,4-butyl and the internal standard peak area, respectively average. Sample mass fraction of 2,4-D butyl ester 1 (%) according to equation (1) calculation of the concentration of 2,4-D butyl rho1 (g/L) according to equation (2) Calculated.