

ICS 65.100.10

CCS G25



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

GB 23557-2009

Methomyl emulsifiable concentrates

灭多威乳油

Issued on: April 27, 2009

Implemented on: November 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

The standard Chapter 3, Chapter 5 are mandatory, the rest are recommended. Since the implementation of this standard, the original chemical industry standard HG2612-1994 "20% Methomyl 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. This standard is drafted by: Shenyang Chemical Research Institute. Participated in the drafting of this standard. Haili Guixi Chemical Pesticide Co., Pesticide Research Institute in Shandong Province, Jiangsu dragon Chemical Co., Ltd., Jiangsu Su Yancheng Limin Chemical Co., Ltd. The main drafters of this standard. Zhao Xin, Li Xiujie, Running an, Lidong Qin, of cloud point, Wei Hongsheng. Methomyl EC Other name, structural formula and basic physicochemical parameters of the active ingredient product of methomyl as follows: ISO common name. methomyl CIPAC digital code. 264 Chemical name. S- methyl-N - [(methylcarbamoyl) oxy] thioacetate imidate Structure. Empirical formula. C₅H₁₀N₂O₂S Molecular weight. 162.20 (according to 2005 international relative atomic mass) Biological activity. Insecticidal Melting point. 78 °C ~ 79 °C Vapor pressure (25 °C). 0.72mPa Solubility (g/L, 25 °C). 58 water; Methanol 1000; 730 acetone; Ethanol 420 Stability. At room temperature, an aqueous solution decomposes slowly in the sunlight, exposure to air and alkaline medium decomposition speed

1 Scope

GB 23557-2009 is the Chinese national standard on methomyl emulsifiable concentrates, in the field of agriculture. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 27 April 2009 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 November 2009. Classification: ICS 65.100.10, CCS G25. 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 standard specifies the methomyl EC requirements, test methods and marking, labeling, packaging, storage and transportation. This standard applies to the original drug methomyl and preparation of the emulsifier is dissolved in a suitable solvent Methomyl EC.

1.2 Moisture /% ≤

8.0 Emulsion stability (diluted 200 times) Qualified Low temperature stability a qualified Thermal storage stability of a qualified a 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.

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 4838 EC pesticide packaging

GB/T 19136 Determination of Pesticide Thermal storage stability

GB/T 19137 Pesticide cryogenic stability Determination

3 Requirements

3.1 Composition and appearance This product should meet the standards of the original drug methomyl made homogeneous oily liquid without visible suspended matter and

sediment.

3.2 Technical Specifications Methomyl EC shall comply with the requirements of Table 1.

1 Methomyl EC Control Project Index project index 20% 40% Methomyl mass fraction /%
20.0 + 40.0 + 2.0-2.0 1.2-

4.2 Identification Test Liquid chromatography

--- The identification test can be carried out simultaneously with the determination of the mass fraction of methomyl. Under the same chromatographic operating conditions, the test The retention time of the sample solution and the standard solution to a peak of methomyl retention time, the relative difference should be less than 1.5%.

4.3 Determination of the mass fraction of methomyl

4.3.1 Method summary Sample was dissolved in methanol, methanol + water as the mobile phase, to use as filler SpherisorbC8 stainless steel column and UV detector (235nm), the sample of methomyl reverse phase HPLC separation and determination.

4.3.2 Reagents and solutions Methanol. HPLC grade; Water. The new secondary steam distilled water; Methomyl Standard. Known methomyl mass fraction $\geq 99.0\%$.

4.3.3 Instruments High performance liquid chromatography. a variable wavelength UV detector; Chromatographic data processor or chromatography workstation; Column. 200mm x 4.6mm (i.d) stainless steel column SpherisorbC8, 10 μ m filler contents (or with equivalent effect C8, C18 bonded phase); Filter. filter pore size of about 0.45 μ m; Micro injector. 50 μ L; Quantitative sample line. 5 μ L; Ultrasonic cleaner.

4.3.4 HPLC operating conditions Mobile phase. phi (methanol. water) = 40.60, by membrane filtration, and degassing; Flow rate. 1.0mL/min; Column temperature. room temperature (temperature change should not exceed 2 °C); Detection wavelength. 235nm; Injection volume. 5 μ L; Retention time. Methomyl about 4.1min. 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. Typical methomyl EC HPLC is shown in Figure 1. 1

--- methomyl. Figure 1 methomyl EC HPLC diagram

4.3.5 measuring step

4.3.5.1 Preparation of standard solution Weigh methomyl standard 0.10g (accurate to 0.0002g), a 50mL volumetric flask, diluted with methanol to the mark. accurate Pipette the solution 10mL in 50mL volumetric flask, diluted with methanol to the mark.

4.3.5.2 Preparation of sample solution Weigh containing methomyl EC about 0.10g of the

sample (accurate to 0.0002g), a 50mL volumetric flask, diluted with methanol to the mark Degree, shake. Pipette accurately above solution 10mL in 50mL volumetric flask, diluted with methanol to the mark.

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 needles methomyl peak area relative change After less than 1.5%, according to the solution, sample solution, sample solution, standard order of standard solution was measured.

4.3.6 Calculation The two needle sample solution and measured before and after the two doses of the standard sample solution Methomyl peak areas are averaged. Sample methomyl The mass fraction of 1 (%), according to equation (1). $1 = A_2 (1)$ Where. A_1

--- the standard solution, the average methomyl peak area; A_2

--- sample solution, the average methomyl peak area; Book GB 23557-2009

--- Methomyl standard mass fraction, expressed as a percentage.

4.3.7 allowable difference Difference methomyl content of two parallel determination results shall not be greater than 0.5%, the arithmetic mean value as a measurement result.