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HISTORY OF METHYL BROMIDE FUMIGANT, METHODS OF USE, TECHNICAL SAFETY REQUIREMENTS FOR USE

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Abstract
This article provides information about the history of methyl bromide, its uses, contraindications to the use of the fumigant, and the effects it has on the human body when used improperly.

Keywords: Methyl bromide, fumigant, decontamination, poisoning, gas vaporizer.

Introduction

History of methyl bromide Methyl bromide was first synthesized by Perkinson in 1884. It was used as a fumigant to combat warehouse pests in France in 1932, and later in the USA. At that time, it began to be widely used in disinfection. Plants, fruits and vegetables were resistant to concentrations and were effective against insects. In the former USSR, methyl bromide was first used in 1958 in the port of Kherson, where it was used to fumigation cargo in ship berths. By 1984, world consumption of this fumigant had reached 45.5 thousand tons. In 1992, it was already used in the amount of 71.5 thousand tons. Such a large amount had a serious impact on the environment, which led the United Nations Environment Program to designate it as a substance that depletes the ozone layer. Since January 1, 1998, methyl bromide can only be used for ship disinfection and quarantine purposes. Canada agreed to this condition, in Germany the use of the substance was reduced by about 70% from January 1, 1996 and its use was banned from January 1, 1998. In foreign countries, methyl bromide was banned from January 1, 1998, including for quarantine and ship fumigation. The Netherlands completely banned the use of methyl bromide, including for soil fumigation; in Italy its use was banned from January 1, 1999. However, in the United States, among farmers who cannot use this drug in their crop cultivation practices, a petition was created, especially in the state of California, to limit or ban the use of methyl bromide.

The United Nations Montreal Protocol calls for a complete phase-out of methyl bromide use in industrialized countries, with a target of 10% by 2010, 25% by 2001 and 50% by 2005. Consequently, there is a need to find alternative substances or methods to use.

WHAT IS METHYL BROMIDE?

Methyl bromide (bromomethane, methyl bromide) is an organic substance. Formula CH_3Br. Colorless gas, boiling point 3.6℃, solubility in water (170℃) 18.3 grams per liter. Fast-acting

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poison. Concentration in air 0.01 mg/m^3. Methyl bromide has insecticidal and acaricidal properties. It is used in a hermetically sealed area against pests of agricultural products.

It is used to combat pests of agricultural storage products: Surinamese mealworm, small mealworm, Comstock worm, leatherworms, southern barn moth, pests of wood and planting materials.

Figure 1. Methyl bromide

Metil-bromid fumiganti bilan zarasizlantirsh ishdarini olib boradigan mutaxassisilarga qo‘yiladigan talablar

Disinfection with methyl bromide fumigant is carried out by specialists who have reached the age of 18, have undergone special training, do not have a medical contraindication to working with pesticides, and have a certificate for independent disinfection.

Since the process of phytosanitary disinfection of quarantined products and quarantined objects with methyl bromide (pressurized gas cylinders) is extremely dangerous, a work permit is issued for this process.

Before starting disinfection work, a member of the disinfection team:

- Perform the tasks specified in the work permit;
- Receive instructions from the head of the disinfection team, give instructions at the workplace, taking into account the specifics of the disinfection work; All disinfection work with methyl bromide must be carried out in a special filtering gas mask and using gas analyzers. Before starting the decontamination process, the gas mask is checked for its operability (tightness).

Respiratory protective equipment (gas masks): must comply with standards, technical conditions for decontamination, instructions for use of preparations used in decontamination, and must be of the correct size, comfortable and not restrict movement during movement.

When providing personal protective equipment: respirators, gas masks (gas masks), overalls, etc. to employees for use during the decontamination process, the head of the fumigation team must conduct explanatory work on the rules for their use, methods for checking their suitability, and the process of using these protective equipment in practice.

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Figure 2. Fumigation special clothing

Special Fumigation Squad

One of the main tasks of the Fumigation Squad is to disinfect agricultural products under quarantine being exported and imported from our Republic. According to it, if quarantine organisms are detected in fruit seedlings, vegetables, melon products, citrus fruits, wood and boards, etc., disinfection with fumigants is carried out. This creates the basis for ensuring the phytosanitary cleanliness of export and import goods entering our country.

Contraindications to the use of methyl bromide fumigant

Persons under 18 years of age, pregnant and lactating women, those who cannot work in a gas mask, and those with the following diseases:

a) diseases of the central nervous system;
b) diseases caused by neuropathic conditions, epilepsy;
c) mental disorders;
g) endocrine-vegetative diseases;
d) liver and kidney diseases;
e) heart diseases;
j) atrophic rhinitis, ozena (stink rhinitis), nasal sycosis, chronic laryngitis;
z) tuberculosis, bronchitis, bronchial asthma and other types of respiratory diseases;
i) chronic inflammation of the cornea and eyelids;
k) patients with skin diseases are not allowed to work with methyl bromide.

A person who has been poisoned with even a mild form of methyl bromide fumigant or fumigant of hazard group I is not allowed to work with these preparations until they have fully recovered.

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