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## Permit Conditions for Applications of Metam-Sodium and Potassium N-methyldithiocarbamate (Metam-Potassium) Products

**Date Established** November 15, 2000

**Enforcement Letter** ENF 2000-044

**Distribution** County Agricultural Commissioners

**Referrals** If you have any questions pertaining to this document, please contact your Senior Pesticide Use Specialist liaison.

### Approval

*original signed by*

David Duncan, Acting Chief  
Pesticide Enforcement Branch  
(916) 445-3871

**Introduction** The attached permit conditions are recommended for shank injection, sprinkler, rotary tiller, or flood application of metam-sodium and Potassium N-methyldithiocarbamate (metam-potassium), products that generate methyl-isothiocyanate (MITC). County agricultural commissioners (commissioners) may specify any or all conditions they deem necessary to minimize the potential of off-site movement of MITC.

The Department of Pesticide Regulation (DPR) plans to address applicator training, drip application systems, and granular formulations of MITC-generating products (e.g., dazomet) at a later date. A final determination defining buffer zones is pending a DPR evaluation that is currently underway.

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# Permit Conditions for Applications of Metam-Sodium and Potassium N-methyldithiocarbamate (Metam-Potassium) Products, Continued

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## **MITC-Generating Products**

Metam-sodium and metam-potassium may be used as soil sterilants for the production of agricultural plant commodities. During the application process, these materials react on contact with warm, moist soil and decompose quickly to form MITC, hydrogen sulfide, and other volatile “gases.” These “gases” diffuse upward through spaces in the soil and account for the fumigant activity.

Due to the impending phase-out of methyl bromide, many growers are replacing methyl bromide with other alternative soil fumigants. Therefore, along with an increase in metam-sodium use, several alternative materials have recently become available for agricultural use. Two such products, dazomet and metam-potassium were recently registered for use in the production of agricultural plant commodities to suppress and/or control soil-borne pests. Like metam-sodium, dazomet and metam-potassium decompose quickly, generating MITC.

To minimize the off-site movement of MITC, DPR developed permit conditions the commissioner may consider when issuing permits for metam-sodium and metam-potassium products.

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## **Restricted Materials**

DPR recently initiated an emergency regulation to designate dazomet and metam-potassium restricted materials when used for the production of agricultural plant commodities. This determination was based on the products’ tendency to decompose forming MITC and other volatile gases. MITC is moderately toxic with regard to short-term exposures. When MITC degrades due to photolysis, the chemical methyl isocyanate (MIC) is formed. MIC is known to be reactive and can be acutely toxic to man and animals. DPR anticipates the emergency regulation will be filed with the Office of the Secretary of State early in November 2000.

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# Permit Conditions for Applications of Metam-Sodium and Potassium N-methyldithiocarbamate (Metam-Potassium) Products, Continued

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## Metam-Potassium

The following metam-potassium products are currently registered for production of agricultural plant commodities within California. The product labels for these materials state, [*Application Must Be In Compliance with Technical Information Bulletin – California, “Guidance For All Application Methods For Metam Sodium in California.”*]

### **BUSAN 1180**

Buckman Laboratories, Inc.  
EPA Registration No. 1448-362

Busan 1180 is a water-soluble liquid used for the suppression of weeds, plant parasitic nematodes, and soil borne fungi, in ornamental, food, and fiber crops. The major use of Busan 1180 has been for the production of carrots. Busan 1180 may be applied using soil injection, rotary tiller, or chemigation systems (other than sprinkler irrigation). **The application of Busan 1180 using sprinkler irrigation is prohibited.** Refer to the Busan 1180 label for equipment specifications.

### **K-PAM HL**

AMVAC Chemical Corporation  
EPA Registration No. 5482-483

K-Pam HL is a water-soluble liquid used for the suppression of soil-borne pests. K-Pam HL may be applied by soil injection, soil bedding equipment, or sprinkler irrigation systems that include a center pivot, flood (basin), furrow, border, or drip irrigation system. Refer to the K-Pam HL label for equipment specifications.

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# Permit Conditions for Applications of Metam-Sodium and Potassium N-methyldithiocarbamate (Metam-Potassium) Products, Continued

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## **Dazomet**

The following dazomet products are registered as a pre-plant treatment for the production of ornamental plants or non-bearing fruit, nut, and vine crops; lawn and turf; and potting soil or compost within California.

### **Basamid Granular**

BASF Corporation  
EPA Registration No. 7969-99

### **Basamid Granular**

Micro Flo Company  
EPA Registration No. 7969-99-51036

Basamid Granular is generally used for pre-planting control of most weeds, nematodes, and soil diseases. Basamid Granular may be distributed onto moist soil using scoops, shakers, or drop-type granular spreaders. Immediately after spreading, the granules are incorporated into the moist soil. The soil surface is then rolled (compressed), tarped, or irrigated to impede fumigant escape.

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## Attachment

cc: Mr. Daniel J. Merkley, Agricultural Commissioner Liaison (w/Attachment)



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# Permit Conditions for Applications of Metam-Sodium and Potassium N-methyldithiocarbamate (Metam-Potassium) Products

## Overview

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**Date of issue** November 15, 2000

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**Purpose** This document provides the permit conditions for applications of metam-sodium and Potassium N-methyldithiocarbamate (metam-potassium) products.

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**Attachments** The information is outlined in topic sections as follows:

Topic	Section
All Application Blocks	1
Specific Applications Blocks	2
Definitions	3

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## NOTES

- The local county agricultural commissioner (commissioner) may increase the buffer zone based upon their site evaluation. However, the buffer zone shall not be decreased near sensitive sites.
  - Drip applications will be addressed at a later date.
  - Granular formulations of methyl isothiocyanate (MITC)–generating products will be addressed at a later date.
  - Training will be addressed at a later date.
  - *Italicized* text indicates the final determinations are pending an ongoing evaluation.
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# Section 1

## All Application Blocks

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**Application blocks** The permit conditions (conditions) in Section 1 apply to all application blocks. See Section 2, Specific Application Blocks, for specific application information.

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**Scope** The local commissioner specifies the applicable conditions, based on an evaluation of the proposed use. Implementation of the conditions “near” sensitive sites beyond the buffer zone may be applied, based upon the commissioner’s determination of the level of sensitivity of the particular site in question.

The permittee shall be responsible for ensuring compliance with permit conditions specified by the commissioner, pursuant to Title 3, California Code of Regulations section 6426(b). When applied by a licensed pest control business (PCB), the permittee shall provide a copy of the permit conditions to the PCB prior to the application. The PCB shall comply with all application requirements.

Users shall comply with the provisions of the Food and Agricultural Code and Title 3 of the California Code of Regulations, the product label including the Technical Information Bulletin (TIB), and permit conditions. **Where requirements differ, users shall always follow the more restrictive conditions.**

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- All applications**
- Observe all applicable requirements to minimize off-site movement when applying metam-sodium or potassium N-methyldithiocarbamate (metam-potassium) products.
  - Climatic conditions, including the absence of an “inversion,” shall be suitable for commencement and continuation of each application.
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## All Application Blocks, Continued

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**Mitigation of  
off-site  
movement**

- Whenever irrigation equipment is required, the equipment shall be in place prior to the commencement of the application.
- Whenever irrigation equipment is required and mitigation of off-site movement is necessary, a minimum of ½-inch of water shall be applied, started immediately and completed within four hours.
- Water delivery system capacity shall meet or exceed the specifications of the TIB, product label, and permit conditions.

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## Section 2

### Specific Application Blocks

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**Application blocks** The conditions in Section 2 apply to specific application blocks. Please refer to Section 1, All Application Blocks, for additional application information.

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**Field monitoring near sensitive sites** Field monitoring shall be conducted on an hourly basis and a record of the following application information maintained *when applied within 1,500 feet of an occupied structure*:

- Date of application
- Date and time of the field monitoring
- Wind speed
- Wind direction
- Temperature (air and soil)
- Odor (yes or no)
- Application start and stop time
- Method of application
- Grower's name
- Permit number
- Field location/site number
- Number of acres treated
- Soil moisture (% field capacity)

In addition to the above requirements, additional requirements for sprinkler applications are shown below:

- Irrigation set number
- Irrigation rate (inch/hour)
- Water pressure (psi)
- Nozzle size

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## Specific Application Blocks, Continued

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### **Post-application field monitoring**

Post-application field monitoring shall be conducted every 2 hours for a minimum of 12 hours after the application has ceased. Post-application monitoring includes documentation of the following information:

- Date and Time
- Observations (changes in weather conditions, etc.)
- Odor (yes or no)
- Irrigation, when required, including the date, time, comments or observations, and the amount of water (inches).

Each field monitoring and post-application monitoring record shall be maintained by the permittee for a minimum of six months or as designated by the commissioner.

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### **Shank injection or rotary tiller applications near sensitive sites**

- A minimum buffer zone of 500 feet shall be required for all applications that exceed 64 pounds of active ingredients per acre. The commissioner may increase the buffer zone based upon their site evaluation. However, the buffer zone shall not be decreased.
- When applying to multiple blocks, subsequent applications shall move away from the sensitive site, unless expressly allowed by permit.
- Operational sprinkler irrigation equipment shall be in place whenever the rate exceeds 64 pounds of active ingredients per acre.

Field equipment shall meet the following minimum specifications:

- Dry disconnect fittings (closed system transfer) shall be installed on all tanks and equipment.
  - Each tractor saddle tank shall be equipped with a minimum size #50 mesh screen on both the fill and discharge outlets.
  - Main line shutoff or by-pass valves shall be used to stop flow to the distribution manifold.
  - All systems shall be equipped with an individual shank monitoring system to detect flow problems in each individual shank.
  - Dual check valves shall be installed on each outlet between the manifold and as close as possible to the discharge point.
  - All components of the delivery system normally below ground shall be metal and suitable for use as provided on the product label.
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## Specific Application Blocks, Continued

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### **Sprinkler applications near sensitive sites**

- A minimum buffer zone of 500 feet from the sensitive site shall be required. The commissioner may increase the buffer zone based upon their site evaluation. However, the buffer zone shall not be decreased.
- When applying to multiple blocks, application blocks shall move away from the sensitive site, unless expressly allowed by permit.
- The product shall be applied evenly over a minimum of 4 hours and in a minimum of .80 inch of water.
- After the application is completed, a minimum of ½-inch of water shall be applied, started immediately and completed within four hours.

**The Busan 1180 label prohibits all sprinkler applications.**

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### **Flood application near sensitive sites**

- Floodwater shall be available during the post application-monitoring period in an amount sufficient to provide at least one inch of water over the application block.
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## Section 3

### Definitions

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#### Definitions

- **Application block** – means a field or portion of a field treated in a 24-hour period that is typically identified by visible indicators, maps, or other means.
  - **Applicator** – the person or firm that physically makes the application. Includes growers and pest control businesses.
  - **Irrigating** - means applying additional water to the application block. (Previously referred to as **water-sealing, water-capping, or water-layering.**)
  - **Monitoring** - shall consist of a thorough inspection of the entire treatment area.
  - **Sensitive site** – is designated based on an evaluation by the commissioner. The term “sensitive site” as used in these permit conditions is based on highly sensitive populations or populated areas such as schools, churches, and day care centers. As such, all mitigation measures may not be necessary, depending upon the nature of the “sensitive site.”
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