

EPA's Safety Measures for Aluminum and Magnesium Phosphide Fumigants¹

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Introduction

The U.S. Environmental Protection Agency (EPA) is requiring new restrictions on aluminum and magnesium phosphide products used to control burrowing rodents. EPA's intent is to better protect people, especially children, from dangerous exposures. The new restrictions, effective spring 2010, prohibit all uses of the products around residential areas, increase buffer zones for treatment around non-residential buildings that could be occupied by people or animals, and create more protective product labeling. This document outlines the new measures.

Uses

Aluminum and magnesium phosphide are fumigants used to control insects and rodents. They are primarily used for indoor fumigation of raw agricultural commodities, animal feeds, processed food commodities, and non-food commodities in sealed containers or structures, and for outdoor fumigation of burrows to control rodents and moles in non-domestic areas and non-cropland agricultural areas. Aluminum and magnesium phosphide are

formulated as tablets, pellets, impregnated materials, and dusts. Aluminum and magnesium phosphide are restricted-use chemicals (Figure 1).

RESTRICTED USE PESTICIDE DUE TO HIGH ACUTE INHALATION TOXICITY OF PHOSPHINE GAS	
<small>For retail sale to Dealers and Certified Applicators only. For use by Certified Applicators or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification. Refer to the directions in the Applicator's Manual for requirements of the physical presence of a Certified Applicator.</small>	
PELLETS	
ACTIVE INGREDIENT -ALUMINUM PHOSPHIDE	55.0%
INERT INGREDIENTS	45.0%
TOTAL	100.0%

Figure 1. As shown on this sample label, aluminum and magnesium phosphide are restricted-use pesticides.

Hazards

Fumigant pesticides form gases or vapors toxic to plants, animals, and microorganisms. Aluminum and magnesium phosphide products for controlling burrowing rodents are formulated as tablets and pellets that are rapidly transformed to highly toxic phosphine gas when exposed to moisture. Phosphine fumigants have been associated with accidental poisoning incidents, and their use is restricted to specially trained pesticide applicators (Figure 2).

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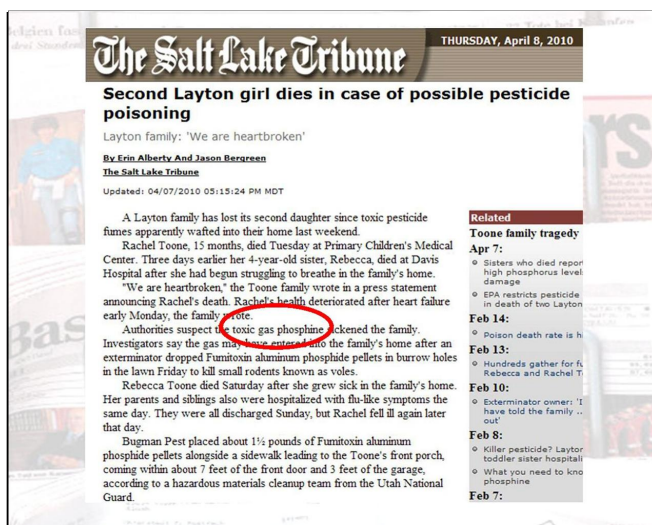


Figure 2. Media report of phosphide poisoning

Expanded Restrictions

To increase public safety by reducing potential exposure to phosphine fumigants, EPA is expanding the restrictions and requiring clearer label directions and precautions for aluminum and magnesium phosphide products that are used in rodent burrow fumigation. Indoor use of such products has long been prohibited. EPA has expanded and clarified the outdoor use restrictions for these products as follows:

- Use is strictly prohibited around all residential areas, including single and multi-family residential properties, nursing homes, schools (except athletic fields, where use may continue), day care facilities, and hospitals.
- The products must only be used outdoors for control of burrowing pests, and are for use only on agricultural areas, orchards, non-crop areas (such as pasture and rangeland), golf courses, athletic fields, parks and recreational areas, cemeteries, airports, rights-of-way, earthen dams, and other non-residential institutional or industrial sites.
- Products must not be applied in a burrow system that is within 100 feet of a building that is or may be occupied by people or domestic animals. This buffer zone for treatment around non-residential buildings that could be occupied by people or animals has been increased from 15 feet to 100 feet.

- When this product is used in athletic fields or parks, the applicator must post a sign at entrances to the treated site containing the signal word DANGER/PELIGRO, skull and crossbones, the words: DO NOT ENTER/NO ENTRE, FIELD NOT FOR USE, the name and EPA registration number of the fumigant, and a 24-hour emergency response number. Signs may be removed 2 days after the final treatment.
- When this product is used out-of-doors in a site frequented by people, other than an athletic field or park, the applicator shall post a sign at the application site containing the signal word DANGER/PELIGRO, skull and crossbones, the name and EPA registration number of the fumigant, and a 24-hour emergency response number may be removed 2 days after the final treatment.

Fumigant Management Plans must be written before all applications of phosphine products, including all burrowing pest fumigations. A Fumigant Management Plan is a written description of the steps designed to plan for a safe, legal and effective fumigation. The certified applicator and owner of the property to be fumigated must characterize the area to be treated and include all safety requirements in the plan before application.³

Additional Information

Fishel, F.M. 2005. Pesticide Toxicity Profile: Phosphorous and Sulfur Fumigants. EDIS Publication PI-73. <http://edis.ifas.ufl.edu/pi110> (accessed April 2010). Department of Agronomy, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.

Additional Notes:

3. Expanded Restrictions section reprinted in part from <http://www.epa.gov/oppsrrd1/reregistration/alphosphide/aluminum-magnsm-phos-fs.html#expedited>.