

INITIAL STATEMENT OF REASONS AND PUBLIC REPORT
DEPARTMENT OF PESTICIDE REGULATION

Title 3. California Code of Regulations
Amend Section 6400
Pertaining to Phosphine Gas and Magnesium Phosphide

This is the Initial Statement of Reasons required by Government Code section 11346.2, and the public report specified in section 6110 of Title 3, California Code of Regulations (3 CCR). Section 6110 meets the requirements of Title 14, CCR section 15252, and Public Resources Code section 21080.5 pertaining to certified state regulatory programs under the California Environmental Quality Act.

SUMMARY OF PROPOSED ACTION/PESTICIDE REGULATORY PROGRAM ACTIVITIES AFFECTED

The pesticide regulatory program activities that will be affected by the proposal are those pertaining to pesticide chemicals designated as state-restricted materials. In summary, the proposed action would designate the pesticide chemicals phosphine and magnesium phosphide as state-restricted materials.

SPECIFIC PURPOSE AND FACTUAL BASIS

Phosphine gas materials have been in use as pesticides in the U.S. for more than 50 years. Metal phosphides (aluminum phosphide and magnesium phosphide) are primarily used for insect control in stored commodities and vertebrate pest control. These metal phosphides are usually applied as solids (pellets or granular-containing sachets) that react with water vapor in the air to form phosphine gas, the actual toxic agent.

In addition to the metal phosphides, phosphine gas itself has been registered as a pesticide since 2001. The gas materials presently come in either a 100 percent formulation, to be diluted and injected by a proprietary application device, or a two percent formulation for direct injection. Phosphine is classified as a flammable gas, with a lower explosive limit of 1.8 percent in air.

If metal phosphides are ingested, phosphine gas evolves in the digestive tract producing symptoms such as nausea, vomiting, diarrhea, pain in the chest and abdominal areas, tightness in the chest, coughing, headache, and dizziness. In severe cases, this may progress to cardiovascular collapse, pulmonary edema, cyanosis, and respiratory failure. Inhalation exposure to phosphine gas can result in both severe pulmonary irritation and mucous membrane irritation, and can include the symptoms associated with ingestion (nausea, vomiting, pain in the chest, etc.).

From 1994 through 2005, there were 88 illnesses reported to the Department of Pesticide Regulation's (DPR's) Pesticide Illness Surveillance Program that were related to exposure to phosphine products. DPR conducted work site evaluations of several commodity fumigation facilities that use phosphine gas and metal phosphides, and has done extensive review of illness data, enforcement activities, and regulatory requirements. The labels do not appear to address the

complexity of the conditions in facilities, such as proper monitoring procedures, and exhaust or ventilation systems used to control exposure.

Existing law (Food and Agricultural Code [FAC] sections 14004.5 and 14005) authorizes the Director to adopt, by regulation, a list of restricted materials based upon criteria including danger of impairment of public health; hazards to pesticide applicators, farmworkers, and domestic animals; hazards to the environment from pesticide drift onto streams, lakes, and wildlife sanctuaries; and hazards to wildlife and other crops through persistent residues in the soil. The Director shall adopt regulations that govern the possession and use of any restricted material that he or she finds and determines is injurious to the environment or to any person, animal, crop, or other property.

Phosphine gas and all metal phosphides are federally classified as restricted materials. However, only aluminum phosphide and zinc phosphide are California-restricted materials. Therefore, DPR proposes to amend section 6400(e) by designating phosphine gas and magnesium phosphide as state-restricted materials.

The proposed regulatory action will require users of phosphine gas and magnesium phosphide products to obtain a restricted-material permit (or more likely, add these materials to an existing permit) from the local county agricultural commissioner (CAC) before use. CACs use restricted-materials permits to establish local requirements or conditions over and above state regulations on the use of pesticide products. Being closest to the pesticide-handling operations, the CAC is most qualified, and required by regulation, to condition restricted-materials permits to account for local conditions. CACs craft permits based on their evaluation of the actual use conditions that exist at the application site.

Designating these chemicals as restricted materials will provide an effective mechanism to implement appropriate mitigation measures including specific training and certification requirements, and CAC on-site evaluation to ensure worker safety, thereby preventing possible exposures when these chemicals are used for the production of agricultural commodities.

CONSULTATION WITH OTHER AGENCIES

DPR consulted with the California Department of Food and Agriculture during the development of the text of proposed regulations, as specified in FAC section 11454, and the February 6, 1992, Memorandum of Agreement that was developed per FAC section 11454.2.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION

DPR has not identified any feasible alternatives to the proposed regulatory action that would lessen any adverse impacts, including any impacts on small businesses, and invites the submission of suggested alternatives.

IDENTIFICATION OF ANY SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECT THAT CAN REASONABLY BE EXPECTED TO OCCUR FROM IMPLEMENTING THE PROPOSAL

The proposal in effect is a mitigation measure to protect farmworkers, pesticide applicators, and the public. DPR's review of the proposed action showed that no significant adverse environmental effect to California's air, soil, water, plants, fish, or wildlife can reasonably be expected to occur from implementing the proposal. Therefore, no alternatives or mitigation measures are proposed to lessen any significant adverse effects on the environment.

EFFORTS TO AVOID UNNECESSARY DUPLICATION WITH FEDERAL REGULATIONS

The proposed regulatory action does not duplicate or conflict with federal regulations. There are no regulatory requirements contained within the Code of Federal Regulations that compel pesticide users to comply with local and state laws and regulations, such as the California requirement for filing a Notice of Intent with the CAC 24 hours prior to application. Phosphine and magnesium phosphide are federally restricted materials.

DOCUMENTS RELIED UPON

1. Fong, Harvard, Joshua Johnson, and Frank Schneider. An Overview of Phosphine-Generating Pesticides Used in California in 2005 (HS-1863). Department of Pesticide Regulation, Sacramento. January 23, 2008.
2. NIOSH Pocket Guide to Chemical Hazards; September 2005, Department of Health and Human Services, Centers for Disease Control and Prevention. NIOSH Publication No. 2005-149.
3. Consultation on Draft Regulations on Fumigants. California Environmental Protection Agency, Agencywide Economic Analysis Unit, Air Resources Board. Memorandum from Stephen Storelli to Linda Irokawa-Otani, Regulations Coordinator, DPR. April 9, 2008.