DEGESCH MAGTOXIN®

PREPAC SPOT FUMIGANT

FOR SPOT TREATMENT OF INSECTS IN FOOD AND
FEED PROCESSING MACHINERY AND EQUIPMENT

READ THE ENTIRE LABEL, APPLICATOR’S MANUAL AND GUIDANCE FOR PREPARATION OF A
FUMIGATION MANAGEMENT PLAN BEFORE USING.

THIS PRODUCT CAN ONLY BE USED IN CONJUNCTION WITH A DETAILED FUMIGATION
MANAGEMENT PLAN

RESTRICTED

DANGER (INSERT POISON SYMBOL) POISON

KEEP OUT OF REACH OF CHILDREN

GUARANTEE: Magnesium Phosphide 66%

REGISTRATION NO. 26524 PEST CONTROL PRODUCTS ACT

NET CONTENTS: 12 Pouches per Pail Containing
5 Interconnected Prepacs
Total: 60 Prepacs, Each Containing
66 Magtoxin® Pellets
NET WEIGHT: 2.376 kg

Manufactured by:
DEGESCH America, Inc.
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P. O. Box 116
Weyers Cave, Virginia 24486 USA
EPA Est. No. 40285-VA-01
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Internet: www.degeschamerica.com
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7 Meridian Road
Etobicoke, Ontario
Canada M9W 4Z6
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Fax: 416-798-1647

Form No. 30359 (1/09)
NOTICE TO USER: This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

**NATURE OF RESTRICTION:** This product is for retail sale to and use only by appropriately provincially licensed persons for those uses covered by the applicator’s certification or persons trained in accordance with the Applicator’s Manual working under the direct supervision and in the physical presence of the certified applicator. Consult local pesticide regulatory authorities about use permits which may be required. This product must be stored away from lodging for humans, animal quarters and normal work areas to avoid inadvertent exposure. This product is accompanied by an approved label, an Applicator’s Manual and Guidance for Preparation of a Fumigation Management Plan. READ AND UNDERSTAND THE ENTIRE LABELLING.

**RESTRICTED USES:** Spot fumigation is the short-term treatment of food and feed processing machinery and equipment with toxic vapors for control of the adult and larval life stages of insects, which infest food particles remaining within the equipment. The minimum exposure time of 34 hours is not long enough to ensure destruction of pupae or eggs. In addition, much of the equipment to be treated is of loose or open construction and cannot readily be sealed. Other than in bins and tanks, it is not unusual for virtually all of the hydrogen phosphide gas to have leaked out in 24 hours or less. Since this type of treatment merely interrupts the life cycle of the insect pests, spot fumigations need to be performed at regular intervals, at intervals of one month or less, until the problem is brought under control.

Spot fumigations with *Magtoxin® Prepac Spot Fumigant* must not be conducted at temperatures below 5°C(40°F). The minimum duration of the spot fumigation is 34 hours. This exposure period serves not only to control the infestation, but also to allow ample time for reaction of the Prepac. Deactivation and disposal of *Magtoxin® Prepac* that are only partially spent will require extra care and precautions. See recommendations given under “Disposal Instructions”. Refer to the Applicator’s Manual for detailed Precautions, Recommendations and Directions for Use. Under no circumstances shall any processed food, feed or bagged commodity come into direct contact with *Magtoxin® Prepac Spot Fumigant*, or a raw agricultural commodity that will be used directly as a food without further processing.

Phosphine gas may be hazardous to birds nesting on or near warehouses. Carefully inspect the outside of the structure prior to application of the fumigant to ensure the absence of nesting birds. This product is not to be used for vacuum fumigations.

The use of this product is RESTRICTED due to the acute inhalation toxicity of hydrogen phosphide (phosphine, PH₃) gas. This product is accompanied by an approved label and Applicator's Manual. READ AND UNDERSTAND THE ENTIRE LABEL AND MANUAL. All parts of the labeling are equally important for safe and effective use of this product. Call the manufacturer if you have any questions or do not understand any part of this labeling.

(RIGHT PANEL)

**PRECAUTIONS:**

**Forms Extremely Hazardous Vapour. KEEP OUT OF REACH OF CHILDREN.** Do not ingest pellets or dust. Keep dust and granules out of eyes and away from skin and clothing. Do not eat, drink or smoke while handling *Magtoxin® Prepac Spot Fumigant*.

Exposure to moist air or liquids releases flammable and toxic phosphine (hydrogen phosphide) gas. Piling of tablets, pellets or bags or the addition of liquid to the product is prohibited. Spontaneous ignition may result if contacted by liquids such as water, acids, or chemicals.

It is not necessary to wear gloves or other protective clothing when handling *Magtoxin® Prepac Spot Fumigant*. However, wear dry gloves of cotton or other material if contact with metal phosphide pellets or dust is likely. Wash hands thoroughly after handling magnesium phosphide products.

Appropriate respiratory protection must be worn during all following operations: application of the fumigant from...
within a structure, initiation of aeration and after aeration when testing prior to re-entry, during deactivation of partially spent Prepacs, and attending to spills and leaks. Fumigated areas must be aerated to 0.1 ppm hydrogen phosphide or less prior to re-entry by unprotected workers.

For hydrogen phosphide levels, up to 5 ppm, the minimum protection is a NIOSH/MSHA approved air-purifying full-face gas mask with a chin style, front- or back-mounted canister approved for phosphine OR any NIOSH/MSHA approved self-contained breathing apparatus with a full facepiece. Above this level or, in situations where the hydrogen phosphide concentration is unknown, a NIOSH/MSHA approved self-contained breathing apparatus (SCBA) with a full facepiece, operated in a positive pressure mode, must be worn.

If a beard or long sideburns interfere with the fit of respiratory protection, they must be shaven.

Keep available a NIOSH/MSHA approved SCBA with a positive pressure mode, to be used if it is necessary to re-enter a treated area before aeration is complete or in situations where the level of phosphine is unknown.

**ENVIRONMENTAL HAZARDS:**
DO NOT contaminate irrigation or drinking water supplies or aquatic habitats such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands by cleaning of equipment or disposal of wastes.

**SAFETY RECOMMENDATIONS:**
Theft of products: Immediately report to the local police department thefts of metal phosphide fumigants. Registrant must be informed of any incident involving the use of this product.
FIRST AID
Symptoms of exposure to phosphine-releasing products can include headache, dizziness, nausea, difficult breathing, vomiting, and diarrhea. In all cases of exposure, protect yourself, remove the person from the source of exposure and get them to an Emergency department. If possible, bring this Applicator’s Manual, the container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

FIRST AID RESPONDER PROTECTION: Phosphine gas is a highly toxic systemic poison and a severe respiratory tract irritant. Persons exposed to solid phosphides, which react with moisture to produce phosphine gas, can pose risks to others if phosphides are on clothes, skin, or hair. First Aid responders should protect themselves through the use of appropriate personal protective equipment before attempting to rescue or care for a person who has been exposed to a phosphine-releasing product, and/or if entering a zone with potentially unsafe phosphine levels. A NIOSH/MSHA approved self-contained breathing apparatus (SCBA) operated in a positive pressure mode is recommended in response situations that involve exposure to potentially unsafe or unknown levels of phosphine (see the PRECAUTIONS section of product label or applicator’s manual for further guidance regarding personal protective equipment).

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration using a bag-valve-mask device to prevent possible secondary exposure to phosphine gas to the first aid responder. Do not perform mouth-to-mouth resuscitation. Do not give anything by mouth to an unconscious person. Call a poison control centre or doctor immediately for further treatment advice.

IF SWALLOWED: Call a poison control centre or doctor immediately for treatment advice. DO NOT DRINK WATER. Do not administer anything by mouth or make the person vomit. It is likely that this exposure will lead to spontaneous vomiting.

IF ON SKIN OR CLOTHING: Brush or shake material off clothes and shoes in a well ventilated area. Allow clothes to aerate in a ventilated area prior to laundering. Do not leave contaminated clothing in occupied and/or confined areas such as automobiles, vans, motel rooms, etc. Wash contaminated skin thoroughly with soap and water for 15-20 minutes. Call a poison control centre or doctor for further treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.
HOT LINE NUMBER
Have the product container label or Applicator's Manual with you when calling a poison control centre, doctor, or when going for treatment. CONTACT 1-800-308-4856 FOR ASSISTANCE WITH HUMAN OR ANIMAL MEDICAL EMERGENCIES. You may also contact Degesch America, Inc. 540-234-9281/1-800-330-2525 or, GARDEX CHEMICALS, LTD. 416-675-1638. For all other chemical emergencies, please contact CHEMTREC – 1-800-424-9300 or Canadian Transport Emergency Centre (CANUTEC) 613-996-6666.

DISPOSAL: Refer to the Disposal instructions of the Applicator's Manual for proper disposal of Magtoxin® Prepac Spot Fumigant after fumigation is completed. NIOSH/MSHA approved respiratory protection must be worn during all steps of deactivation. Open dumping is prohibited. Do not discharge this product, or material containing this product, into natural waterways, wetlands (swamps, bogs, marshes, potholes, etc.) or municipal wastewater collection systems. Do not contaminate water, food or feed by disposal. Proper disposal of magnesium phosphide is required to ensure minimal impact on the environment. See Section 13 of the Applicator’s Manual for additional disposal instructions.
TOXICOLOGICAL INFORMATION: Degesch Magtoxin Prepac Spot Fumigant containing magnesium phosphide reacts with moisture from the air, acids and many other liquids to release hydrogen phosphide (phosphine, PH₃) gas. Mild exposure by inhalation causes malaise (indefinite feeling of sickness), ringing in the ears, fatigue, nausea and pressure in the chest which is relieved by removal to fresh air. Moderate poisoning causes weakness, vomiting, pain just above the stomach, chest pain, diarrhea and dyspnea (difficulty in breathing). Symptoms of severe poisoning may appear within a few hours to several days. Severe poisoning may result in pulmonary edema (fluid in lungs) and may lead to dizziness, cyanosis (blue or purple skin colour), unconsciousness, and death. In sufficient quantity, phosphine affects the liver, kidneys, lungs, nervous system and circulatory system, and may result in (1) pulmonary edema, (2) liver elevated serum AST, ALT and ALP, reduced prothrombin, hemorrhage and jaundice (yellow skin colour) and (3) kidney haematuria (blood in urine) and anuria (abnormal or lack of urination). Pathology is characteristic of hypoxia (oxygen deficiency in body tissue). Frequent exposure to concentrations above permissible levels over a period of days or weeks may cause poisoning. Inhalation can cause lung edema (fluid in lungs) and hyperaemia (excess of blood in a body part), small perivascular brain hemorrhages and brain edema (fluid in brain). Poisonous if swallowed. Ingestion can cause lung and brain symptoms but damage to the viscera (body cavity organs) is more common.

Treatment is symptomatic. The following measures are suggested for use by the physician in accordance with the physician’s own judgment:

In its milder to moderate forms, symptoms of poisoning may take up to 24 hours to appear. Monitoring should continue for at least this long. Manifestations of severe poisoning appear early. Hypoxia and hypotension should be treated with usual supportive measures of oxygenation, intubation, ventilation and positive pressure as needed, and intravenous fluids, pressors and inotropes as required, respectively. In the event of the ingestion of a large quantity of magnesium phosphide, once the patient is stabilized, aspiration of gastric contents by inserting a 16 french naso-gastric tube to suction the stomach contents might be considered. There is no specific antidote. Hemodialysis may be indicated if renal failure develops but does not remove the toxin.
APPLICATOR'S MANUAL

FOR

DEGESCH MAGTOXIN® PREPAC SPOT FUMIGANT

FOR SPOT TREATMENT OF INSECTS IN FOOD AND FEED PROCESSING MACHINERY AND EQUIPMENT

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RESTRICTED

DANGER (Insert Danger/Poison Symbol) POISON

KEEP OUT OF REACH OF CHILDREN

GUARANTEE: Magnesium Phosphide..........................66%

REGISTRATION NO. 26524

Manufactured by:
Degesch America, Inc.
153 Triangle Drive
P. O. Box 116
Weyers Cave, VA USA  24486
Telephone: 540-234-9281/800-330-2525
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Gardex Chemicals
7 Meridian Road
Etobicoke, Ontario
Canada M9W 4Z6
Telephone: 416-675-1638
Fax: 416-798-1647

(INSIDE COVER)
THIS PRODUCT IS ACCOMPANIED BY AN APPROVED LABEL AND APPLICATOR’S MANUAL. READ AND UNDERSTAND THE ENTIRE LABEL AND MANUAL. ALL PARTS OF THE LABELING ARE EQUALLY IMPORTANT FOR SAFE AND EFFECTIVE USE OF THIS PRODUCT. CALL THE MANUFACTURER IF YOU HAVE ANY QUESTIONS OR DO NOT UNDERSTAND ANY PART OF THIS LABELING.

REFER TO THIS APPLICATOR’S MANUAL FOR DETAILED PRECAUTIONS, RECOMMENDATIONS AND DIRECTIONS FOR USE.

MAGNESIUM PHOSPHIDE PELLETS ARE NON-COMBUSTIBLE, BUT EXPOSURE TO MOIST AIR OR WATER RELEASES FLAMMABLE AND TOXIC PHOSPHINE (HYDROGEN PHOSPHIDE) GAS. SPONTANEOUS IGNITION MAY RESULT IF CONTACTED BY WATER, ACIDS, OR OTHER LIQUIDS.

HYDROGEN PHOSPHIDE-AIR MIXTURES AT CONCENTRATIONS ABOVE THE LOWER FLAMMABLE LIMIT MAY IGNITE SPONTANEOUSLY. IGNITION OF HIGH CONCENTRATIONS OF HYDROGEN PHOSPHIDE CAN PRODUCE A VERY ENERGETIC REACTION. EXPLOSIONS CAN OCCUR UNDER THESE CONDITIONS AND MAY CAUSE SEVERE PERSONAL INJURY. NEVER ALLOW THE BUILD-UP OF HYDROGEN PHOSPHIDE TO EXCEED EXPLOSIVE CONDITIONS. DO NOT CONFINE SPENT OR PARTIALLY SPENT DUST FROM METAL PHOSPHIDE FUMIGANTS, AS THE SLOW RELEASE OF HYDROGEN PHOSPHIDE FROM THIS MATERIAL MAY RESULT IN THE FORMATION OF AN EXPLOSIVE ATMOSPHERE.

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Spot fumigations with Magtoxin® Prepac Spot Fumigant must not be conducted at temperatures below 5°C (40°F). The minimum duration of the spot fumigation is 34 hours. This exposure period serves not only to control the infestation, but also to allow ample time for reaction of the Prepac. Deactivation and disposal of Magtoxin® Prepacs that are only partially spent will require extra care and precautions. See recommendations given under “Disposal Instructions”. Refer to the Applicator’s Manual for detailed Precautions, Recommendations and Directions for Use.

Under no circumstances shall any processed food, feed or bagged commodity come into direct contact with Magtoxin® Prepac Spot Fumigant, or a raw agricultural commodity that will be used directly as a food without further processing.

Phosphine gas may be hazardous to birds nesting on or near warehouses. Carefully inspect the outside of the structure prior to application of the fumigant to ensure the absence of nesting birds.

This product is not to be used for vacuum fumigations.

Phosphine will corrode certain metals, especially at high concentrations and humidities. Protection or removal of wiring, sensitive equipment or precious metals is recommended under these conditions.
# TABLE OF CONTENTS

1. INTRODUCTION ............................................................................................................................... 1  
SAFETY RECOMMENDATIONS SUMMARY .................................................................................... 2  

2. FIRST AID ......................................................................................................................................... 2  

3. TOXICOLOGICAL INFORMATION ................................................................................................. 3  

4. PRECAUTIONS ................................................................................................................................. 4  
4.1 Hazards to Humans and Domestic Animals .................................................................................. 4  
4.2 Physical and Chemical Hazards ..................................................................................................... 4  
4.3 Environmental Hazards .................................................................................................................. 5  

5. PROTECTIVE CLOTHING ............................................................................................................... 5  

6. RESPIRATORY PROTECTION ........................................................................................................... 5  
6.1 When Respiratory Protection Must Be Worn .............................................................................. 5  
6.2 Permissible Gas Concentration Ranges for Respiratory Protection Devices ......................... 6  
6.3 Requirements for Availability of Respiratory Protection for Outside Applications ........... 6  

7. APPLICATOR AND WORKER EXPOSURE .................................................................................... 6  
7.1 Hydrogen Phosphide Exposure Limits .......................................................................................... 6  
7.2 Application of Fumigant ................................................................................................................ 6  
7.3 Leakage from Fumigated Sites ....................................................................................................... 6  
7.4 Aeration and Reentry ..................................................................................................................... 7  
7.5 Handling Un aerated Commodities .................................................................................................. 7  
7.6 Industrial Hygiene Monitoring ...................................................................................................... 7  

8. PLACARDING OF FUMIGATED AREAS ......................................................................................... 7  

9. FUMIGATION MANAGEMENT PLAN .............................................................................................. 8  

10. DIRECTIONS FOR USE .................................................................................................................. 13  
10.1 General .......................................................................................................................................... 13  
10.2 Efficacy ......................................................................................................................................... 15  
10.3 Recommended Dosage and Exposure Conditions ...................................................................... 16  
10.4 General Recommendations for Spot Fumigations with Magtoxin Prepacs Spot Fumigant ... 16  
10.5 Directions for Spot Fumigations with Magtoxin Prepacs .............................................................. 17  
10.6 Food and Feed Processing Machinery and Equipment ............................................................... 18  

11. STORAGE INSTRUCTIONS ............................................................................................................. 18  

12. DISPOSAL INSTRUCTIONS .......................................................................................................... 18  
12.1 General .......................................................................................................................................... 18  
12.2 Directions for Deactivation and Disposal of Partially Spent Magtoxin Prepacs ..................... 19  

13. SPILL AND LEAK PROCEDURES ................................................................................................. 20  
13.1 General Precautions and Directions ........................................................................................... 20  
13.2 Directions for Deactivation by the Wet Method .......................................................................... 21  

1. INTRODUCTION
DEGESCH metal phosphide products are most often used for the protection of stored commodities from damage by insects. However, the Magtoxin® Prepac Spot Fumigant has been specially manufactured for the treatment of food and feed processing machinery and equipment to control insect infestations arising inside this equipment and machinery. Spot fumigation may be defined as the short-term treatment of processing machinery and equipment with toxic vapors for control of the adult and larval life stages of insects, which infest food and feed particles remaining within the equipment and machinery. These spot treatments are intended to interrupt the life cycles of the insect pests. Since one or more life stages may survive this short-term treatment, spot fumigations must be repeated periodically to control insect infestation. DEGESCH metal phosphide fumigants are acted upon by atmospheric moisture to produce hydrogen phosphide (phosphine, PH₃) gas. Magtoxin Prepac Spot Fumigant contains magnesium phosphide (Mg₃P₂) as its active ingredient and will liberate hydrogen phosphide via the following chemical reaction:

\[ \text{Mg}_3\text{P}_2 + 6\text{H}_2\text{O} \rightarrow 3\text{Mg(OH)}_2 + 2\text{PH}_3 \]

Hydrogen phosphide gas is highly toxic to insects, burrowing pests, humans and other forms of animal life. In addition to its toxic properties, the gas will corrode certain metals and may ignite spontaneously in air at concentrations above its lower flammable limit of 1.8%(v/v). These hazards will be described in greater detail later on in this Applicator's Manual for DEGESCH Magtoxin Prepac Spot Fumigant. Magtoxin Prepac Spot Fumigant also contains ammonium carbamate, which liberates ammonia and carbon dioxide as follows:

\[ \text{NH}_2\text{COONH}_4 \rightarrow 2\text{NH}_3 + \text{CO}_2 \]

These gases are essentially nonflammable and act as inerting agents to reduce fire hazards. The ammonia gas also serves as a warning agent.

The Magtoxin Prepac Spot Fumigant consists of a gas-permeable blister pack of Magtoxin Pellets. Each Magtoxin Prepac Spot Fumigant strip is roughly 10 cm x 40 cm (4-1/4” x 16”) and contains 33 blisters, each blister containing 2 pellets for a total of 66 pellets per strip. Magtoxin pellets weigh approximately 0.6g each and release 0.2g of hydrogen phosphide gas. Each Magtoxin Prepac then will release 13.2g of hydrogen phosphide. The strips are connected end-to-end, 5 Prepac strips in a row, and sealed into gastight aluminum foil pouches. The pouches are packed into covered metal pails, 12 pouches or 60 Magtoxin Prepacs per pail. Each pail contains 3960 Magtoxin pellets, which weigh a total of 2376g and will liberate 792g of hydrogen phosphide gas. The pails are constructed to conform to T.D.G.A. Specifications; Steel Drums, UN1A2/X21.3/5.

Upon opening the aluminum foil pouch, atmospheric moisture penetrates the porous fleece material on the top and bottom of the Magtoxin Prepac. The Magtoxin pellets then begin to react to produce small quantities of hydrogen phosphide gas, which diffuses out through the fleece into the surrounding space. This reaction starts slowly, gradually accelerates and then tapers off as the magnesium phosphide is spent. The rate of decomposition of the Magtoxin Prepac will vary depending upon moisture and temperature conditions. For example, when moisture and temperature are high, decomposition of Magtoxin Prepac may be complete in less than 10 hours. However, at lower ambient temperatures and relative humidity levels, decomposition may require 4 days or more.

After decomposition of the Magtoxin pellets a dark gray powder composed almost entirely of magnesium hydroxide and other approved inert ingredients remains. This powder will be retained inside the fleece of the Prepac strip and may be retrieved after fumigation so as not to contaminate the treated commodity. **The spent Magtoxin Prepac must not be allowed to contaminate the processed food or feed.** Therefore, it must be retrieved after fumigation prior to starting up the processing line unless the spot fumigant has been applied to a fumiport or in some other fashion so as to ensure that it is retained and will not enter the food or feed stream. If properly exposed, the spent Magtoxin Prepac will normally contain
only a small amount of unreacted magnesium phosphide and may be disposed of without hazard. This is not considered a hazardous waste. However, partially spent residual from incompletely exposed Magtoxin Prepacs will require special care. Precautions and instructions for further deactivation and disposal will be given later in this Manual.

Magtoxin Prepacs are supplied in gas-tight foil pouches, and their shelf life is unlimited as long as the packaging remains intact. However, once opened for fumigation, the entire contents of the aluminum foil pouch must be used, as it cannot be resealed. Storage and handling instructions will be given in detail later in the Applicator's Manual.

A summary of safety recommendations is outlined below:

SAFETY RECOMMENDATIONS SUMMARY

1. Carefully read the labeling and follow instructions explicitly.
2. Never fumigate alone from inside the storage structure. At least two persons, a certified applicator and trained person, or two trained persons under the direct supervision of the certified applicator must be present during fumigation of structures when entry into the structure for application of the fumigant is required.
3. At least two persons, a certified applicator and trained person, or two trained persons under the direct supervision of a certified applicator, must be present and must wear the proper safety equipment when a structure that is under fumigation is to be entered. All individuals who are not involved in the fumigation should vacate the treatment area until fumigated areas are aerated to 0.1 ppm hydrogen phosphide or less. Observe all provincial pesticide legislation requirements.
4. The certified applicator must maintain visual and/or voice contact with all fumigation workers during the application of the fumigants.
5. Wear dry gloves of cotton or other breathable material if contact with Magtoxin® Prepac Spot Fumigant dust or pellets from Prepacs is likely. Aerate used gloves and other contaminated clothing in a well ventilated area prior to laundering. Wash hands thoroughly after using Magtoxin® Prepac Spot Fumigant.
6. Never open fumigant containers in a flammable atmosphere. It is preferable to open them in open air, near a fan or other appropriate ventilation, which will rapidly exhaust contaminated air.
7. Exposure to hydrogen phosphide must never exceed 0.1 ppm. This standard applies to all persons in the treatment area.
8. Piling of tablets, pellets or bags are the addition of liquid to the product is prohibited.
9. Dispose of empty containers and spent Prepacs in a proper manner consistent with the label instructions.
10. Post warning placards on fumigated areas as per instructions in Section 8.
11. Prior to fumigation, notify appropriate company employees.
12. Hydrogen phosphide fumigants are not to be used for vacuum fumigations.
13. Fumigated areas must be aerated to 0.1 ppm hydrogen phosphide or less prior to reentry by unprotected workers.
14. Keep containers of Magtoxin® Prepac Spot Fumigant tightly closed except while removing product for application.
15. Phosphine will corrode copper and precious metals at high concentrations or humidities. Protection or removal of wiring, sensitive equipment or precious metals is recommended under these conditions.
16. Under no circumstances shall any processed food, feed or bagged commodity come into direct contact with Magtoxin® pellets, tablets or residual dust, or a raw agricultural commodity that will be used directly as a food without further processing.
17. Do not use magnesium phosphide containers for any purpose other than recycling or reconditioning.
18. Preexposure screening of employees to detect impaired pulmonary function is recommended. Any employees developing this condition should be referred for medical examination.
19. Theft of products: Immediately report to the local police department thefts of metal phosphide fumigants.
20. Registrant must be informed of any incident involving the use of this product.

2. FIRST AID
Symptoms of exposure to phosphine-releasing products can include headache, dizziness, nausea, difficult breathing, vomiting, and diarrhea. In all cases of exposure, protect yourself, remove the person from the source of exposure and get them to an Emergency department. If possible, bring this Applicator’s Manual, the container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

FIRST AID RESPONDER PROTECTION: Phosphine gas is a highly toxic systemic poison and a severe respiratory tract irritant. Persons exposed to solid phosphides, which react with moisture to produce phosphine gas, can pose risks to others if phosphides are on clothes, skin, or hair. First Aid responders should protect themselves through the use of appropriate personal protective equipment before attempting to rescue or care for a person who has been exposed to a phosphine-releasing product, and/or if entering a zone with potentially unsafe phosphine levels. A NIOSH/MSHA approved self-contained breathing apparatus (SCBA) operated in a positive pressure mode is recommended in response situations that involve exposure to potentially unsafe or unknown levels of phosphine (see the PRECAUTIONS section of product label or applicator’s manual for further guidance regarding personal protective equipment).

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration using a bag-valve-mask device to prevent possible secondary exposure to phosphine gas to the first aid responder. Do not perform mouth-to-mouth resuscitation. Do not give anything by mouth to an unconscious person. Call a poison control centre or doctor for further treatment advice.

IF SWALLOWED: Call a poison control centre or doctor immediately for treatment advice. DO NOT DRINK WATER. Do not administer anything by mouth or make the person vomit. It is likely that this exposure will lead to spontaneous vomiting.

IF ON SKIN OR CLOTHING: Brush or shake material off clothes and shoes in a well ventilated area. Allow clothes to aerate in a ventilated area prior to laundering. Do not leave contaminated clothing in occupied and/or confined areas such as automobiles, vans, motel rooms, etc. Wash contaminated skin thoroughly with soap and water for 15-20 minutes. Call a poison control centre or doctor for further treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.
Have the product container label or Applicator’s Manual with you when calling a poison control centre, doctor, or when going for treatment. CONTACT 1-800-308-4856 FOR ASSISTANCE WITH HUMAN OR ANIMAL MEDICAL EMERGENCIES. You may also contact DEGESCH AMERICA, INC. 540-234-9281/1-800-330-2525 or, GARDEX CHEMICALS, LTD. 416-675-1638. For all other chemical emergencies, please contact CHEMTREC – 1-800-424-9300 or Canadian Transport Emergency Centre (CANUTEC) 613-996-6666.
3. TOXICOLOGICAL INFORMATION: Degesch Magtoxin Prepac Spot Fumigant containing aluminium phosphide reacts with moisture from the air, acids and many other liquids to release hydrogen phosphide (phosphine, PH₃) gas. Mild exposure by inhalation causes malaise (indefinite feeling of sickness), ringing in the ears, fatigue, nausea and pressure in the chest which is relieved by removal to fresh air. Moderate poisoning causes weakness, vomiting, pain just above the stomach, chest pain, diarrhea and dyspnea (difficulty in breathing). Symptoms of severe poisoning may appear within a few hours to several days. Severe poisoning may result in pulmonary edema (fluid in lungs) and may lead to dizziness, cyanosis (blue or purple skin colour), unconsciousness, and death. In sufficient quantity, phosphine affects the liver, kidneys, lungs, nervous system and circulatory system, and may result in (1) pulmonary edema, (2) liver elevated serum AST, ALT and ALP, reduced prothrombin, hemorrhage and jaundice (yellow skin colour) and (3) kidney haematuria (blood in urine) and anuria (abnormal or lack of urination). Pathology is characteristic of hypoxia (oxygen deficiency in body tissue). Frequent exposure to concentrations above permissible levels over a period of days or weeks may cause poisoning. Inhalation can cause lung edema (fluid in lungs) and hyperaemia (excess of blood in a body part), small perivascular brain hemorrhages and brain edema (fluid in brain). Poisonous if swallowed. Ingestion can cause lung and brain symptoms but damage to the viscera (body cavity organs) is more common.

Treatment is symptomatic. The following measures are suggested for use by the physician in accordance with the physician’s own judgment:

In its milder to moderate forms, symptoms of poisoning may take up to 24 hours to appear. Monitoring should continue for at least this long. Manifestations of severe poisoning appear early. Hypoxia and hypotension should be treated with usual supportive measures of oxygenation, intubation, ventilation and positive pressure as needed, and intravenous fluids, pressors and inotropes as required, respectively. In the event of the ingestion of a large quantity of aluminium phosphide, once the patient is stabilized, aspiration of gastric contents by inserting a 16 french naso-gastric tube to suction the stomach contents might be considered. There is no specific antidote. Hemodialysis may be indicated if renal failure develops but does not remove the toxin.
4. **PRECAUTIONS**

4.1 **DANGER: Hazardous to Humans, Domestic Animals and Nesting Birds – KEEP OUT OF REACH OF CHILDREN.**

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada’s web site at [www.croplife.ca](http://www.croplife.ca)

Magnesium phosphide from **Magtoxin® Prepacs** Spot Fumigant, pellets or dust may be fatal if swallowed. Do not get in eyes, on skin or on clothing. Do not eat, drink or smoke while handling magnesium phosphide fumigants. If a sealed pouch is opened, or if the material comes into contact with moisture, water or acids, these products will release hydrogen phosphide (phosphine, \( \text{PH}_3 \)) which is an extremely toxic gas. If a garlic odour is detected, refer to the Industrial Hygiene Monitoring (section 6.6) of this Applicator's Manual for appropriate monitoring procedures. Pure hydrogen phosphide gas is odourless; the garlic odour is due to a contaminant. Since the odour of hydrogen phosphide may not be detected under some circumstances, the absence of a garlic odour does not mean that dangerous levels of hydrogen phosphide gas are absent. Observe proper reentry procedures specified elsewhere on the label and Applicator’s Manual to prevent overexposure. In situations where ventilation of buildings is required following fumigation (e.g. warehouses), phosphine gas may pose a potential hazard to small birds (e.g. swallows) nesting on or near those structures. Therefore, carefully inspect the outside of the structure prior to application of the fumigant to ensure the absence of nesting birds.

4.2 **Physical and Chemical Hazards**

Magnesium phosphide in Prepacs, pellets and partially spent dust will release hydrogen phosphide if exposed to moisture from the air or if it comes into contact with water, acids and many other liquids. Magnesium phosphide is considerably more reactive than aluminum phosphide and will liberate gas more rapidly. This is particularly true in the presence of water and at higher temperatures. Since hydrogen phosphide may ignite spontaneously at levels above its lower flammable limit of 1.8% v/v, it is important not to exceed this concentration. Ignition of high concentrations of hydrogen phosphide can produce a very energetic reaction. Explosions can occur under these conditions and may cause severe personal injury. **Never allow the buildup of hydrogen phosphide to exceed explosive concentrations.** Do not confine spent or partially spent
metal phosphide fumigants as the slow release of hydrogen phosphide from this material may result in formation of an explosive atmosphere. Piling of tablets, pellets or bags or the addition of liquid to the product is prohibited. This may cause a temperature increase, increase the rate of gas production and confine the gas so that ignition could occur.

It is preferable to open pouches of magnesium phosphide products in open air as under certain conditions, they may flash upon opening. Containers may also be opened near a fan or other appropriate ventilation, which will rapidly exhaust contaminated air. When opening pouches of Magtoxin Prepac Spot Fumigant, point the pouch away from the face and body and cut open the far end. Although the chances for a flash are very remote, never open containers of metal phosphide fumigants in a flammable atmosphere. These precautions will also reduce the fumigator's exposure to hydrogen phosphide.

Pure phosphine (hydrogen phosphide) gas is practically insoluble in water, fats and oils, and is stable at normal fumigation temperatures. However, phosphine will corrode copper and precious metals at high concentrations or humidities. Protection or removal of wiring, sensitive equipment or precious metals is recommended under these conditions. Thus, small electric motors, smoke detectors, brass sprinkler heads, batteries and battery chargers, fork lifts, temperature monitoring systems, switching gears, communication devices, computers, calculators and other electrical equipment should be protected or removed before fumigation. Hydrogen phosphide will also react with certain metallic salts and, therefore, sensitive items such as photographic film, some inorganic pigments, etc., should not be exposed.

4.3 Environmental Hazards
DO NOT contaminate irrigation or drinking water supplies or aquatic habitats such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands by cleaning of equipment or disposal of wastes.

5. PROTECTIVE CLOTHING

Wear dry gloves of cotton or other breathable material if contact with dust from Magtoxin® Prepac Spot Fumigant is likely. Wear a loose fitting long sleeve shirt, long pants, shoes and socks. After fumigation activities, remove all protective clothing; aerate in a well-ventilated area then wash thoroughly, separately, before re-use.

If Magtoxin® pellets or dust become trapped inside clothing, remove clothing, wash hands and exposed skin thoroughly, shower and change into clean clothing.

If application of fumigant is performed from within the structure to be fumigated, approved respiratory protection against phosphine must be worn during fumigation, by all personnel in the structure (see below).

6. RESPIRATORY PROTECTION

6.1 When Respiratory Protection Must Be Worn
NIOSH/MSHA approved respiratory protection must be worn if worker exposure limits cannot be met through engineering controls (such as forced air ventilation) and/or appropriate worker practices. For example, if application of the fumigant is performed from within the structure to be fumigated, approved respiratory protection is required to be worn by all personnel inside the structure. Respiratory protection is also required to be worn upon reentry into a partially aerated structure, (e.g. upon initiation of aeration or after aeration when testing for re-entry), and when attending to spills and leaks. When required, gas concentration measurements for safety purposes may be made using low-level detector tubes*. See the section on Applicator and Worker Exposure for monitoring requirements.

The respiratory protection must fit properly, any obstruction to a proper fit should be removed (e.g. beard, long sideburns).
*Information on hydrogen phosphide (phosphine, PH₃) detector tubes may be obtained from your distributor.

6.2 Permissible Gas Concentration Ranges for Respiratory Protection Devices
A NIOSH/MSHA approved air-purifying full-face gas mask with a chin style mounted canister approved for phosphine OR a NIOSH/MSHA approved supplied-air respiratory with a full face piece must be used at levels up to 5 ppm. Above this level or in situations where the hydrogen phosphide concentration is unknown, a NIOSH/MSHA approved, self-contained breathing apparatus (SCBA) or its equivalent must be worn and operated in a positive pressure mode. Observe provincial pesticide regulations.

6.3 Requirements for Availability of Respiratory Protection for outside applications
Respiratory protection must also be available for applications from outside the area to be fumigated and outdoor applications even if exposures above the permitted exposure limits are not expected. Observe Provincial pesticide regulations.

7. APPLICATOR AND WORKER EXPOSURE

7.1 Hydrogen Phosphide Exposure Limits
Exposure to hydrogen phosphide gas must never exceed 0.1 ppm for applicators and workers during application. Application is defined as the time period covering the opening of the first container, applying the appropriate dosage of fumigant and closing up the site to be fumigated. All persons in the treated site and in adjacent indoor areas are covered by this exposure standard. Periodic gas measurements should be made in the worker's breathing zone using phosphine detector tubes or another suitable detector, unless they are protected by a NIOSH/MSHA approved supplied air respirator operated in a positive pressure mode.

The level of phosphine gas may be higher at the core of the commodity than the surrounding air. Monitoring is required when unloading or otherwise disturbing a commodity that has been fumigated to ensure that liberation of gas from the treated commodity does not result in unacceptable levels of hydrogen phosphide.

7.2 Application of Fumigant
Depending upon temperature and humidity, Magtoxin Spot Fumigant will release hydrogen phosphide gas slowly upon exposure to moisture from the air. If the fumigator's exposure exceeds 0.1 ppm, approved respiratory protection must be worn. If Magtoxin® Spot Fumigant is to be applied from within the structure to be fumigated, approved respiratory protection must be worn by all personnel inside the structure. All individuals who are not involved in the fumigation should vacate the treatment area (i.e. for indoor applications, this should include the room housing the equipment to be treated and all connected rooms) until fumigated areas are aerated to 0.1 ppm hydrogen phosphide or less. When required, gas concentration measurements for safety purposes may be made using low level detector tubes. See the information on Industrial Hygiene Monitoring in Section 6.6 of this Applicator's Manual.

7.3 Leakage from Fumigated Sites
Hydrogen phosphide is highly mobile and given enough time may penetrate seemingly gas-tight materials such as concrete, wood and cinder block. Therefore, adjacent, enclosed areas likely to be occupied should be examined to ensure that significant leakage has not occurred. Sealing of the fumigated site and/or air flow in the occupied areas must be sufficient to meet exposure standards.

7.4 Aeration and Reentry
If the area is to be entered after fumigation, it must be aerated until the level of hydrogen phosphide gas is 0.1 ppm or below. The area or site must be monitored to ensure that liberation
of gas from the treated commodity does not result in the development of unacceptable levels of hydrogen phosphide. Do not allow reentry into treated areas by any person before this time unless protected by an approved respirator. A NIOSH/MSHA approved self-contained breathing apparatus operated in positive pressure mode must be worn during testing of the phosphine level and during initiation of aeration, if re-entry of the fumigated structure is necessary.

7.5 **Handling Unaerated Commodities**

Exposure to hydrogen phosphide must never exceed 0.1 ppm during moving, storage or processing of incompletely aerated commodities.

The level of phosphine gas may be higher at the core of the commodity than the surrounding air. Monitoring is required when unloading or otherwise disturbing a commodity that has been fumigated to ensure that liberation of gas from the treated commodity does not result in unacceptable levels of hydrogen phosphide.

7.6 **Industrial Hygiene Monitoring**

Periodic gas measurements should be made in the worker's breathing zone using phosphine detector tubes or another suitable detector, unless they are protected by a NIOSH/MSHA approved supplied air respirator operated in a positive pressure mode.

It is recommended that hydrogen phosphide exposures be documented in an operations log or manual for each site and operation where exposures may occur. The purpose of this monitoring is to prevent excessive exposures, to verify whether the appropriate respirator is being worn during fumigation within a structure and whether respiratory protection is required upon re-entry after aeration. This monitoring is mandatory although, once exposures have been adequately characterized, subsequent monitoring is not routinely required. However, spot checks should be made occasionally, especially if conditions change significantly or if an unexpected garlic odour is detected. Gas measurements should be made in the worker's breathing zone. Monitoring is not required for outdoor operations.

There are a number of devices on the market for the measurement of hydrogen phosphide gas levels for industrial hygiene purposes. One of these is the hydrogen phosphide detector tube used in conjunction with the appropriate hand-operated air sampling pump. These devices are reliable, portable, simple to use, do not require extensive training and are relatively rapid, inexpensive and accurate. Low level detector tubes are available which can detect 0.1 ppm and are suitable for industrial hygiene monitoring. Information on hydrogen phosphide (phosphine, PH₃) detector tubes may be obtained from your distributor.

8. **PLACARDING OF FUMIGATED AREAS**

The applicator must placard or post all entrances to the structures under fumigation with placards at least 3cm long and 25cm wide that are made of substantial material that can be expected to withstand adverse weather conditions bearing the following information:

1. The signal word DANGER in letters at least 7 cm high and the SKULL AND CROSSBONES symbol in red.
2. The statement, "Area and/or commodity under fumigation, DO NOT ENTER".
3. The statement, "This sign may only be removed after the equipment or machinery is completely aerated (contains 0.1 ppm or less of hydrogen phosphide gas). Workers must not be exposed to more than 0.1 ppm hydrogen phosphide. If workers are to enter the treated area before it is aerated to 0.1 ppm hydrogen phosphide, appropriate respiratory protection must be worn."
4. The date and time fumigation begins, date, and time which aeration can begin.
5. Name of fumigant used.
6. Name, address and telephone number of the provincially licensed applicator.
7. Placards must bear a 24-hour emergency response telephone number.

All entrances to the fumigated and deactivation area must be placarded. Where possible, placards should be
placed in advance of the fumigation to keep unauthorized persons away.

It is recommended that the persons responsible for removing placards be familiar with the physical, chemical and toxicological properties of hydrogen phosphide. They should also be knowledgeable in making gas concentration measurements, exposure limits, symptoms, and first aid treatment for hydrogen phosphide poisoning.

9. FUMIGATION MANAGEMENT PLAN

The certified applicator is responsible for working with the owners and/or responsible employees of the site to be fumigated to develop and follow a Fumigation Management Plan (FMP). The FMP is intended to ensure a safe and effective fumigation. The FMP must address characterization of the site, and include appropriate monitoring and notification requirements, consistent with, but not limited to, the following:

1. Inspect the site to determine its suitability for fumigation.
2. When sealing is required, consult previous records for any changes to the structure, seal leaks, and monitor any occupied adjacent buildings to ensure safety.
3. Prior to each fumigation, review any existing FMP, MSDS, Applicator’s Manual and other relevant safety procedures with company officials and appropriate employees.
4. Consult company officials in the development of procedures and appropriate safety measures for nearby workers that will be in and around the area during application and aeration.
5. Consult with company officials to develop an appropriate monitoring plan that will confirm that nearby workers and bystanders are not exposed to levels above the allowed limits during application, fumigation and aeration. This plan must also demonstrate that nearby residents will not be exposed to concentrations above the allowable limits.
6. Consult with company officials to develop procedures for local authorities to notify nearby residents in the event of an emergency.
7. Confirm the placement of placards to secure entrance into any structure under fumigation.
8. Confirm the required safety equipment is in place and the necessary manpower is available to complete a safe and effective fumigation.
9. Written notification must be provided to the receiver of a vehicle that is fumigated in transit (i.e., fumigation in transit is permitted by rail or ship only).

These factors must be considered in putting a FMP together. It is important to note that some plans will be more comprehensive than others. All plans should reflect the experience and expertise of the applicator and circumstances at and around the structure and/or area.

In addition to the plan, the applicator must read the entire label and the Applicator’s Manual and follow its directions carefully. If the applicator has any questions about the development of a FMP, contact the supplier for further assistance.

The FMP and related documentation, including monitoring records, must be maintained for a minimum of 2 years.

8 GUIDANCE FOR PREPARATION OF A FUMIGATION MANAGEMENT PLAN

Purpose
A Fumigation Management Plan (FMP) is an organized, written description of the required steps involved to help ensure a safe, legal and effective fumigation. It will also assist you and others in complying with pesticide product label requirements. The guidance that follows is designed to help assist you in addressing all the necessary factors involved in preparing for and fumigating a structure and/or area.

This guidance is intended to help you organize any fumigation that you might perform, PRIOR TO ACTUAL TREATMENT. It is meant to be somewhat prescriptive, yet flexible enough to allow the experience and expertise of the fumigator to make changes based on circumstances which may exist in the field. By following a step-by-step procedure, yet allowing for flexibility, a safe and effective fumigation can be performed.

Before any fumigation begins, carefully read and review the label and the Applicator’s Manual. This information must also be given to the appropriate company officials (supervisors, foreman, safety officer, etc.) in charge of the site. Preparation is the key to any successful fumigation. If you do not find specific instructions for the type of fumigation that you are to perform listed in this Guidance Document, you will want to construct a similar set of procedures using this document as your guide or contact Degesch America, Inc. for assistance. Finally, before any fumigation begins, you must be familiar with and comply with all applicable federal, provincial and municipal laws and regulations. The success of the fumigation is not only dependent on your ability to do your job but also upon carefully following all rules, regulations and procedures required by governmental agencies.

A CHECKLIST GUIDE FOR A FUMIGATION MANAGEMENT PLAN

This checklist is provided to help you take into account factors that must be addressed prior to performing all fumigations. It emphasizes safety steps to protect people and property. The checklist is general in nature and cannot be expected to apply to all types of fumigation situations. It is to be used as a guide to prepare the required plan. Each item must be considered. However, it is understood that each fumigation is different and not all items will be necessary for each fumigation site.

A. PRELIMINARY PLANNING AND PREPARATION

1. Determine the purpose of the fumigation.
   a. Control of insect infestation
   b. Control of vertebrate pests
   c. Plant pest quarantine

2. Determine the type of fumigation. For example:
   a. Space: tarp, mill, warehouse, food processing plant,
   b. Vehicle: railcar, truck, van, container
   c. Commodity: raw agricultural or processed foods or non-food
   d. Type of storage: vertical silo, farm storage, flat storage, etc.
   e. Vessels: ship or barge. In addition to the Applicator’s Manual, read the Cargo, Fumigation and Tackle Regulations under the Canada Shipping Act, 2001.

3. Fully acquaint yourself with the site and commodity to be fumigated, including:
a. The general structure layout, construction (materials, design, age, maintenance), of the structure, fire or combustibility hazards, connecting structures and escape routes, above and below ground, and other unique hazards or structural characteristics. Prepare, with the owner/operator/person in charge, a drawing or sketch of structure to be fumigated, delineating features, hazards, and other structural characteristics.
b. The number and identification of persons who routinely enter the area to be fumigated (i.e. employees, visitors, customers, etc.)
c. The specific commodity to be fumigated, its mode of storage, and its condition.
d. The previous treatment history of the commodity, if available.
e. Accessibility of utility service connections
f. Nearest telephone or other means of communication. Mark the location of these items on the drawing/sketch.
g. Emergency shut-off stations for electricity, water and gas. Mark the location of these items on the drawing/sketch.
h. Current emergency telephone numbers of local health, fire, police, hospital and physician responders.
i. Name and phone number (both day and night) of appropriate company officials.
j. Check, mark and prepare the points of fumigant application locations if the job involves entry into the structure for fumigation.
k. Review labeling and Applicator's Manual
l. Location of command centre
m. Exposure time considerations:
   1. Product (tablet and pellets and sachet) to be used
   2. Minimum fumigation period, as defined and described by the label use directions.
   3. Down time required to be available
   4. Aeration requirements
   5. Cleanup requirements, including dry or wet deactivation methods, equipment, and personnel needs, if necessary.
   6. Measured and recorded commodity temperature and moisture
n. Determination of dosage:
   1. Cubic footage or other appropriate space/location calculations
   2. Structure sealing capability and methods
   3. Label recommendations
   4. Temperature, humidity, wind
   5. Commodity/space volume
   6. Past history of fumigation of structure
   7. Exposure time
   8. Amount of fumigant used
   9. Actual concentration achieved
o. Distance to other on-site and neighbouring off-site structures, recreational areas or areas where bystanders may be exposed.
p. Site of aeration vent(s) to be opened to aerate structure.

B. PERSONNEL
1. Confirm in writing that all personnel in and around the site to be fumigated have been notified prior to application of the fumigant. Consider using a checklist that each employee initials indicating they have been notified.

2. Instruct all fumigation personnel to read the Applicator’s Manual concerning the hazards that may be encountered, and about the selection of personal protection devices, including sufficiently sensitive detection equipment.

3. Confirm that all personnel are aware of and know how to proceed in case of an emergency situation.

4. Instruct all personnel on how to report any accident and/incidents related to fumigant exposure. Provide a telephone number for emergency response reporting.

5. Instruct all personnel to report to proper authorities any theft of fumigant and/or equipment related to fumigation.

6. Establish a meeting area for all personnel in case of an emergency.

C. MONITORING

1. Safety
   a. Scheduled ambient air monitoring of phosphine concentrations must be conducted, downwind, along the fumigation boundary to prevent worker and bystander exposure to concentrations of hydrogen phosphide \( > 0.1 \text{ ppm} \) and to determine where exposures may occur. It may be necessary to monitor gas levels in other areas as well. Document where monitoring will occur.

   b. Monitor (and record) the wind direction and adjust the phosphine monitoring if wind direction changes over the fumigation/aeration period.

   c. Keep a log or manual of monitoring records for each fumigation site. This log must, at a minimum, contain the timing, number of readings taken and level of concentrations found in each location.

   d. When monitoring, document any phosphine level even if it is present below the limit of detection.

   e. Outdoor air monitoring must be conducted during fumigation and aeration and corrective action must be taken if gas levels exceed the allowed levels in an area where bystanders and/or nearby residents or domestic animals may be located. Monitor gas levels at the fumigation boundary (downwind locations) continuously for one hour, commencing six hours after the introduction of phosphine gas, followed by once every six hours to the beginning of aeration. During aeration, monitor gas levels continuously until the structure is ready for re-entry.

***NOTE: An evacuation action is necessary when phosphine levels exceed 0.1 ppm. To determine phosphine levels, a properly calibrated digital portable gas monitoring unit is needed with alarm
capability for the STEL and TWA. (e.g., Draeger Mini Warn, Draeger Micro Pac Plus, Draeger, Pac III, Draeger Multi Warn, Porta Sens or similar equipment).

2. Efficacy
   a. Phosphine readings should be taken from within the fumigated structure to insure proper gas concentrations, along with temperature and relative humidity readings. Readings must be taken immediately after introduction of the product, six hours after the introduction of the product followed by a reading every twelve hours during the fumigation period. Finally, phosphine readings should be taken every thirty minutes until aeration is complete.
   b. All phosphine, temperature and relative humidity readings should be documented.

D. NOTIFICATION
   1. Confirm all the appropriate local authorities (fire departments, police departments, etc.) have been notified as per label instructions, local ordinances, or instructions of the client.
   2. Prepare written procedure (“Emergency Response Plan”), which contains explicit instructions, names, and telephone numbers so as to be able to notify local authorities if phosphine levels are exceeded in an area that could be dangerous to bystanders and/or domestic animals. Elaborate in this section the key elements of an Emergency Response Plan including reference to evacuation procedures, etc.
   3. Confirm that the receiver of in-transit vehicles under fumigation have been notified and are trained according to Section 10.6.7 of this Applicator’s Manual.

E. SEALING PROCEDURES
   1. Sealing must be adequate to control the pests. Care should be taken to ensure that sealing materials will remain intact until the fumigation is complete.
   2. If the site has been fumigated before, review the previous FMP for previous sealing information.
   3. Make sure that construction/remodeling has not changed the building in a manner that will affect the fumigation.
   4. Warning placards must be placed on every possible entrance to the fumigation site.

F. APPLICATION PROCEDURES AND FUMIGATION PERIOD
   1. Plan carefully and apply the product in accordance with the label requirements.
   2. When entering into the area under fumigation, always work with two or more people under the direct supervision of a certified applicator wearing appropriate respirators.
3. Apply fumigant from the outside when and where appropriate.

4. Provide watchmen when the possibility of entry into the fumigation site by unauthorized person cannot otherwise be assured (e.g., by secondary locks, barricades, etc.).

5. When entering structures, always follow applicable provincial legislation for confined spaces.

6. Document that the receiver of vehicles/containers fumigated in-transit has been notified.

7. Turn off any electric lights in the fumigated area of the structure, as well as all non-essential electrical motors.

G. POST-APPLICATION OPERATIONS

1. Provide watchmen when you cannot secure the fumigation site from entry (e.g., by secondary locks, barricades, etc.) by unauthorized persons during the aeration process.

2. Ventilate and aerate in accordance with structural limitations and nearby occupied areas so as to minimize bystander exposure.

3. Turn on ventilating or aeration fans where appropriate.

4. Determine gas concentration in the fumigated environment from outside if possible. Use a sufficiently sensitive gas detector before re-entry into a fumigated structure to determine fumigant concentration.

5. During aeration, monitor gas levels continuously until the structure is ready for re-entry.

6. Keep written records of monitoring to document completion of aeration.

7. Consider temperature when aerating.

8. Ensure that aeration is complete before moving a treated vehicle onto public roads.

9. Remove warning placards when aeration is complete and the fumigated space has been cleared for re-entry using a detection device of sufficient sensitivity.

10. Inform business/client that employees/other persons may return to work or otherwise be allowed to re-enter the aerated structure.

10. DIRECTIONS FOR USE

10.1 General

10.1.1 The use of Magtoxin® Prepac Spot Fumigant is restricted due to the acute inhalation toxicity of hydrogen phosphide (phosphine, PH₃) gas. These products are for retail sale to and use only by provincially licensed personnel for those uses covered by the applicator's certification, or workers trained in accordance with the Applicator's Manual and working under the direct supervision and in the physical presence of the certified
applicator. Physical presence means on site or on the premises. Read and follow the label and this Applicator's Manual, which contains complete instructions for the safe use of this pesticide.

10.1.2 Magnesium phosphide is a highly hazardous material and should be used only by individuals trained in their proper use. Before using, read and follow all label precautions and directions.

Additional copies of this Manual are available from:

DEGESCH America, Inc.    Gardex Chemicals Ltd.
153 Triangle Drive    7 Meridian Road
P. O. Box 116    Etobicoke, Ontario
Weyers Cave, VA 24486    Canada M9W 4Z6
Telephone: (540) 234-9281/800-330-2525    Telephone: 416-675-1638
Internet: [www.degeschamerica.com](http://www.degeschamerica.com)
E-Mail: degesch@degeschamerica.com

Persons working with magnesium phosphide should be knowledgeable of the hazards of this chemical and trained in the use of required respiratory equipment and detector devices, emergency procedures, and use of this fumigant.

10.1.3 At least two persons, a certified applicator and trained person, or two trained persons under the direct supervision of the certified applicator must be present during fumigation, of structures when entry into the structure for application of the fumigant is required. At least two persons, a certified applicator and trained person, or two trained persons under the direct supervision of a certified applicator, must be present and must wear the proper safety equipment when a structure that is under fumigation is to be entered. Only one trained person is required to be present when magnesium phosphide is applied from outside the area to be treated, unless Provincial pesticide regulations require otherwise.

Large scale (permit) fumigations may require the posting of guards to prevent entry into the area under fumigation. Refer to Provincial pesticide regulations.

The certified applicator must maintain visual and/or voice contact with all fumigation workers during the application of the fumigants.

10.1.4 Do not fumigate food processing machinery or equipment with Magtoxin® Prepac Spot Fumigant when air temperature is below 5°C (40°F).

10.1.5 The site and equipment to be spot fumigated must first be inspected to determine if it can be made sufficiently gas tight. Then a plan should be developed to provide for safe and efficient application of the fumigant to include emergency procedures, etc., when required, and to decide how gas monitoring should be conducted to prevent excessive exposures.

10.1.6 It is not necessary to wear gloves or other protective clothing when handling Magtoxin® Prepac Spot Fumigant. However, wear dry gloves of cotton or other material while handling Magtoxin pellets or their dust. Wash hands thoroughly after use.

10.1.7 Hydrogen phosphide gas may flash at concentrations above its flammable limit. Do not open Magtoxin® Prepac Spot Fumigant pouches in an explosive environment. It is preferable to open them in open air, near a fan or other appropriate ventilation, which will rapidly exhaust contaminated air. These precautions will also reduce the applicator's exposure to hydrogen phosphide gas.
10.1.8 Piling of Magtoxin Prepacs, their dust or the addition of liquid to the product is prohibited. Liquids in contact with unreacted magnesium phosphide will greatly accelerate the production of hydrogen phosphide gas which would result in a toxic and/or fire hazard.

10.1.9 As much as is possible, protect unused Magtoxin Prepac Spot Fumigant from excessive exposure to atmospheric moisture during application.

10.1.10 Hydrogen phosphide gas may react with certain metals and their salts to produce corrosion. This gas is corrosive to copper, copper alloys and precious metals such as silver and gold. Sensitive equipment and items containing these elements should be removed or protected prior to fumigation with Magtoxin Prepac Spot Fumigant.

10.1.11 Under no circumstances shall any processed food, feed or bagged commodity come into direct contact with Magtoxin® Prepacs, tablets, pellets or residual dust, or a raw agricultural commodity that will be used directly as a food without further processing. Therefore, retrieval of the Prepacs at the end of the fumigation, prior to restarting the machinery or equipment is required unless applications have been made to fumiports or similar devices within the processing equipment, which will retain the fumigant blisters.

10.1.12 Notify appropriate company employees prior to fumigation. Provide to local officials (fire department, rescue squad, police, etc.) on an annual basis relevant safety information for use in the event of an emergency. Observe all provincial pesticide legislation requirements.

10.1.13 FOR ALL TYPES OF FUMIGATIONS, IF APPLICATION OF FUMIGANT IS TO BE PERFORMED FROM WITHIN THE STRUCTURE TO BE FUMIGATED, APPROVED RESPIRATORY PROTECTION MUST BE WORN BY ALL PERSONNEL IN THE STRUCTURE. APPROVED RESPIRATORY PROTECTION MUST BE WORN IF RE-ENTRY OF THE TREATED AREA IS NECESSARY BEFORE COMPLETE AERATION (refer to the Respiratory Protection and the Applicator and Worker Exposure sections for approved respiratory protection).

10.2 Efficacy

Spot fumigation is the short term treatment of food and feed processing machinery and equipment with toxic vapors for control of the adult and larval life stages of insects, which infest food particles remaining within the equipment. The minimum exposure time of 34 hours is not long enough to ensure destruction of pupae or eggs. In addition, much of the equipment to be treated is of loose or open construction and cannot readily be sealed. Other than in bins and tanks, it is not unusual for virtually all of the hydrogen phosphide gas to have leaked out in 24 hours or less. Since this type of treatment merely interrupts the life cycle of the insect pests, spot fumigations need to be performed at regular intervals, at intervals of one month or less, until the problem is brought under control.

It is recommended that gas concentration measurements are made and/or test insect cages be placed inside the treated equipment to determine efficacy and to ensure that sealing has been adequate. In some cases the entire piece of equipment or machinery could be tarped with plastic sheeting of 4 mil thickness. A good rule of thumb for obtaining satisfactory results is a minimum of 50 to 100 ppm hydrogen phosphide remaining 10 hours after application of the Magtoxin Prepac Spot Fumigant. Once a particular facility has been treated successfully several times and trouble spots eliminated the frequency of efficacy checks and/or concentration may be reduced.

There are many situations in which the use of Magtoxin Prepac Spot Fumigant alone will not solve the infestation problem, and it is generally necessary to use other sanitation techniques. The equipment should be cleaned and run to remove as much of the food or food debris prior to spot fumigation. Dead stock should be removed by vacuuming or other means. Fogging with other approved pesticides is recommended in conjunction with spot fumigant to aid in controlling infestations outside of the machinery and in pieces of equipment which is not practical or possible to seal. In addition to careful sealing prior to treatment, it is a good idea to repair and maintain equipment in proper working condition so as to reduce leaks.
10.3 **Recommended Dosage and Exposure Conditions**

Each Magtoxin Prepac contains 33 blisters, each holding 2 Magtoxin Pellets. Each Magtoxin Pellet will liberate 0.2g of hydrogen phosphide for a total of 13.2g of gas per Prepac. The Prepacs are supplied in a continuous roll of five Prepacs connected end to end. Once opened, the entire contents of a Magtoxin Prepac pouch (5 prepacs) must be used, as it cannot be resealed. The appropriate amount of fumigant for application to the machinery and equipment may be cut from the roll of Prepacs using sharp scissors or another cutting tool. The recommended dosage is 1 - 2 Prepacs per 37m³ (1320 cubic feet) in equipment that is relatively gas tight or which can readily be sealed. This corresponds to a dose of 10 - 20 grams of hydrogen phosphide per 28m³ (1000 cubic feet). It is permissible to use up to 10 Prepacs per 37m³ (1320 cubic feet), 100 grams of hydrogen phosphide per 28m³ (1000 cubic feet), in sifters, purifiers and other pieces of equipment which cannot readily be sealed. However, increased dosage will not completely compensate for gas leaks from poorly sealed or open equipment. In many cases, use of fogging or other sanitation techniques should be relied upon rather than increasing dosage of Magtoxin Prepac Spot Fumigant.

Spot fumigations with Magtoxin Prepac Spot Fumigant must not be conducted at temperatures below 5°C (40°F). The minimum duration of the spot fumigation is 34 hours. This exposure period serves not only to control the infestation, but also to allow ample time for reaction of the Prepac. Deactivation and disposal of Magtoxin Prepacs that are only partially spent will require extra care and precautions. See recommendations given under "Disposal Instructions".

10.4 **General Recommendations for Spot Fumigations with Magtoxin Prepac Spot Fumigant**

10.4.1 The most important aspect in spot fumigation is a thorough understanding of the equipment and all of the various product and air-flow patterns. The fumigator should review schematics and/or diagrams of the facility and a walking survey should be conducted to inspect the food processing machinery and equipment.

An overall plan for the spot fumigation should be developed to include the following items:

- The acquisition of the necessary manpower and supplies to include safety equipment and other essential items.
- A route through the facility for efficient application of the Magtoxin Prepac to minimize workers’ exposures and time required.
- A plan for security during the fumigation period to include placarding and notification of facility's personnel so that no unauthorized persons can enter the treated areas prior to aeration.
- A plan for sealing the equipment prior to application of the spot fumigant.
- Dosage rates and application points. NIOSH/MSHA approved respiration protection is always required when application of Magtoxin Prepacs takes place from inside a structure. Methods of reducing applicator’s exposure, such as the wearing of a respirator should be planned in advance.
- A log to include dosage rates and application points will facilitate accounting for Prepacs during application of the fumigant and its recovery after exposure and aeration.
- Recommendations for repair of machinery, transfer lines, bins or other equipment to improve its ability to retain gas should be given to facility maintenance personnel.
- Gas readings should be taken, to characterize worker's exposure during application, to measure efficacy inside equipment during the exposure period and low level measurements to ensure proper aeration prior to turning the fumigated areas over to facility’s personnel.

NIOSH/MSHA approved respiratory protection should always be worn when performing gas readings from inside the fumigated area.
- A plan for recovery, deactivation and disposal of the spot fumigant.
- Shut down of all ventilation systems and fans during exposure period.
10.5 Directions for Spot Fumigations with Magtoxin Prepac Spot Fumigant

Magtoxin Prepac Spot Fumigant is recommended for spot treatments to control stored products insects in bins, silos, holding tanks, elevator boots and heads, filters, conveyors, spouting, purifiers, food processing equipment, sifters, rollers, dusters and related equipment in mills, food and feed processing plants, breweries and similar industries.

Spot treatment of equipment monthly with Magtoxin Prepac Spot Fumigant or as needed to supplement general pest management program.

10.5.1 Meet with appropriate facility's personnel to discuss the planned fumigation and to ensure that no unauthorized persons will be permitted to enter treated areas prior to aeration.

10.5.2 If possible, have equipment repaired by plant personnel and fumiports installed at convenient application points.

10.5.3 Seal all equipment to which Magtoxin Prepac Spot Fumigant will be applied. Eliminate drafts inside the equipment by closing off sections, which have openings. Take any other steps necessary to prevent air movement inside the equipment. Seal all openings with tape, tarping, (4 mil.) etc., to prevent escape of hydrogen phosphide into rooms housing the equipment. Sites to be fumigated must be tightly sealed.

10.5.4 Run machinery to empty the process stream and remove dead stocks where possible prior to application of Magtoxin Prepac Spot Fumigant.

10.5.5 Windows and doors in rooms housing equipment should be closed prior to application and kept closed during exposure period to reduce drafts. Do not fumigate alone. At least two persons trained in the use of magnesium phosphide must be present during the fumigation, if fumigation is performed from within a structure.

10.5.6 Using sharp scissors or a similar cutting device cut the appropriate amount of fumigant from the roll of Prepacs and apply to the equipment. Be careful not to cut into the blisters and allow intact pellets or spent dust to fall into the machinery. Make sure the Prepacs are flat and are not folded over during application. Prominently mark or otherwise indicate the points of application so that the applied dose may be readily located and recovered after aeration. Aluminum foil pouches in which the Magtoxin Prepacs are packed are not resealable and may not be returned to storage after they have been opened. Once a pouch has been opened, its entire contents must be used or deactivated for disposal.

10.5.7 Under no circumstances shall any processed food, feed or bagged commodity come into direct contact with Magtoxin Prepacs, residual dust, or a raw agricultural commodity that will be used directly as a food without further processing.

10.5.8 All accesses leading to the area under fumigation must be properly placarded with warning signs. Only provincially licensed fumigators, wearing the appropriate respiratory protection, are permitted to enter treated areas prior to aeration.

10.5.9 Aeration may be initiated, after the fumigation period, by turning on ventilation equipment opening doors and windows in the treated areas. Remove covers from bins, vessels and other equipment and turn on dust collector fans. Ensure the treated areas cannot be entered by unauthorized persons until after aeration is complete. Ensure placards are still visible after doors and windows are opened for aeration. Aeration is generally complete in less than one hour.

10.5.10 Do not remove warning placards or permit entry into treated areas without respiratory protection until the gas concentration is 0.1 ppm or below as indicated by a suitable detector for hydrogen phosphide.
10.5.11 Collect all spent or partially spent Magtoxin prepacs from the treated equipment. Transport this material to an appropriate site for further deactivation and ultimate disposal following recommendations given elsewhere in this Applicator's Manual under "Disposal Instructions".

10.6 Food and Feed Processing Machinery and Equipment

Various pieces of commonly encountered food processing equipment are listed in the following along with comments relating to their successful spot treatment with Magtoxin Prepac Spot Fumigant.

10.6.1 Mills and Roll Stands - These are frequently separated front and back, and the dosage should be applied in both sections. Mills and roll stands are generally sufficiently gas tight or can readily be sealed so as to obtain satisfactory results.

10.6.2 Shaker Boxes and Sifters - Shaker boxes and sifters are generally not gas tight but may be spot treated without further sealing if air currents within the process stream are eliminated. It is recommended that the Magtoxin Prepac dose be applied at the bottom.

10.6.3 Purifiers - Purifiers cannot be successfully spot fumigated unless they are completely sealed. Fogging with an approved pesticide is recommended in facilities where sealing of the purifiers is not practical or too labour intensive.

10.6.4 Hoppers and Bins - Hoppers and bins are generally sufficiently gas tight with little or no sealing. Valves and vents should be closed prior to application of the prepacs.

10.6.5 Boots, Closed Conveyors and Transfer Lines, Down Spouts and Pneumatic Tubes - These structures are relatively gas tight and easy to fumigate. Hydrogen phosphide gas will travel readily through open lines, however, it is recommended that they be treated at intervals of no greater than 15 m (50 feet) apart.

10.6.6 Air Filter - Sealing of the air filters is required to eliminate or minimize air currents in the process stream. The filter itself should be carefully sealed along with all roof vents leading from the filter.

11. STORAGE INSTRUCTIONS

1. Store Magtoxin Prepac Spot Fumigant in a dry, well ventilated area away from heat, under lock and key. Maintain temperature below 52°C (130°F). Post as a pesticide storage area. Do not contaminate water, food or feed by storing pesticides in the same areas used to store these commodities.

2. Do not store in buildings where humans or domestic animals reside. Keep out of reach of children.

3. Magtoxin Prepacs are supplied in gas-tight, aluminum foil pouches packed in a metal pail with removable lid. These pouches are not resealable, and the Prepacs must be used immediately or disposed of once they have been opened.

4. The shelf life of Magtoxin Prepac Spot Fumigant is virtually unlimited as long as the pouches are sealed and properly stored in original metal pail.

12. DISPOSAL INSTRUCTIONS

12.1 General

Pesticide wastes are toxic. Open dumping is prohibited. Do not discharge this product, or material containing this product, into natural waterways, wetlands (swamps, bogs, marshes, potholes, etc.) or municipal wastewater collection systems. Proper disposal of magnesium phosphide is required to ensure minimal impact on the environment.

Unreacted or partially reacted magnesium phosphide is acutely hazardous. If these wastes cannot be disposed of according to label instructions, contact the Provincial Regulatory Agency or the Manufacturer. See also Section 13 of this manual, Spill and Leak Procedures.
12.1.1 Do not contaminate water, food or feed by storage or disposal.

12.1.2 Some local and provincial waste disposal regulations may vary from the following recommendations. Disposal procedures should be reviewed with appropriate authorities to ensure compliance with local and provincial regulations. Contact the Provincial Regulatory Agency or the manufacturer.

12.1.3 Dispose of containers in a sanitary landfill or by other procedures approved by provincial and local authorities.

12.1.4 If properly exposed during the fumigation period, Magtoxin Prepacs will contain virtually no unreacted magnesium phosphide. However, because of the short term of the spot treatment and because these fumigations are sometimes performed under cooler and drier conditions, it is required that all Magtoxin Prepacs be subjected to further deactivation prior to ultimate disposal.

12.2 Directions for Deactivation and Disposal of Partially Spent Magtoxin Prepacs

12.2.1 Confinement of partially spent Magtoxin Prepacs, as in a closed container or plastic bag, may result in a fire hazard. Hydrogen phosphide gas may be given off from unreacted magnesium phosphide, and confinement of the gas may result in a flash.

12.2.2 Spent or partially spent Magtoxin Prepacs may be collected for disposal in well ventilated containers such as wire baskets (available from DEGESCH America, Inc. and Gardex Chemicals Ltd.) or porous cloth bags of burlap, cotton or other suitable material. 

Caution: Confinement and the danger of a flash may result from overfilling the ventilated or porous containers. It is preferable to carry out deactivation at the fumigation site. If this is not possible, the Prepacs may be loaded directly into open vehicles for transportation according to T.D.G.A. regulations, to the deactivation site. Caution: Protect the spent or partially spent Prepacs from contact with water as this might result in a flash. Do not pile the cloth bags together.

12.2.3 Magtoxin Prepac Spot Fumigant must always be further deactivated prior to ultimate disposal at a landfill. It may be deactivated using the wet or dry method. The deactivation site must be secured and placarded and only authorized persons should be allowed to enter the deactivation site. Deactivation should take place outdoors. All workers involved in deactivation should be wearing NIOSH/MSHA approved respiratory protection during all steps of deactivation.

12.2.4 Spent or partially spent Magtoxin Prepacs may be deactivated as follows using the "Wet Method".

12.2.4.1 Water is used for deactivation of Magtoxin Prepacs and other magnesium phosphide fumigants by the "Wet Method". Detergent solution is not required for magnesium phosphide fumigants. Fill a drum or other container to be used for wet deactivation in a secure, placarded area with water to within 2 to 5 cm (1 to 2 inches) of the top. Do not allow a large headspace above the surface of the water.

12.2.4.2 Magnesium phosphide will react quite rapidly and very vigorously with liquid water. Therefore, small amounts of partially spent material should be tested initially by immersion in water prior to proceeding with large scale wet deactivation. One or two individual Prepacs should be evaluated first to determine their level of activity.

12.2.4.3 In a well ventilated area, out of doors, wearing respiratory protection, completely submerge in water the entire mass of exposed Prepacs. They may float to the surface and, therefore, it is necessary to hold them under
water by use of a suitable weight. **Caution:** Partially spent **Magtoxin** Prepacs may ignite if they are allowed to float to the surface. Active **Magtoxin** Prepacs should be submerged at least 10 to 15 cm (4 to 6 inches) to prevent smoking of the liberated hydrogen phosphide gas. Prepacs may be placed in wire baskets or porous bags for immersion in water.

Adhere to provincial ambient air quality criteria standards and monitor downwind gas levels. Ensure that the deactivation area is secure and placarded to prevent public and unauthorized worker access.

12.2.4.4 Reaction of the magnesium phosphide with water is practically complete within about 15 to 30 minutes. However, **Magtoxin** Prepacs should be totally immersed for at least 6 hours to ensure total hydrolysis. **Caution:** Removal of Prepacs from water before they are largely deactivated may result in a fire. They may be taken to an approved site for disposal. Dispose of the water at a sanitary landfill or other approved site. Where permissible, the water may be poured out onto the ground. Avoid direct pouring into a storm sewer.

12.2.4.5 **Caution:** Wear appropriate respiratory protection during wet deactivation of partially spent material. Do not cover the deactivation vessel at any time.

12.2.5 Partially Spent **Magtoxin** Prepacs may be deactivated as follows using the "Dry Method".

12.2.5.1 Extension of the fumigation period is the simplest method for further deactivation of partially spent **Magtoxin** Prepacs prior to ultimate disposal.

12.2.5.2 Alternatively, exposed materials may be further deactivated by storing the **Magtoxin** Prepacs out of doors, protected from rain and ground water, in locked wire baskets or other similarly ventilated containers. As time permits, or when the container is full, the deactivated **Magtoxin** Prepacs may be taken to an approved sanitary landfill site for disposal. Storage of partially spent **Magtoxin** Prepacs in a closed container may result in a fire hazard. Large numbers of partially spent Prepacs stored in open containers may ignite if contacted by water.

Adhere to provincial ambient air quality criteria standards and monitor downwind gas levels. Ensure that the deactivation area is secure and placarded to prevent public and unauthorized worker access.

13. **SPILL AND LEAK PROCEDURES**

13.1 **General Precautions and Directions**

This product is highly toxic to fish, birds, and other forms of wildlife. Do not discharge directly to natural waterways, wetlands (swamps, bogs, marshes, potholes, etc.) or municipal wastewater collection systems. Do not contaminate water, food or feed by disposal. Proper disposal of magnesium phosphide is required to ensure minimal impact on the environment. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

A spill, other than incidental to application or normal handling, may produce high levels of gas. When the concentration of hydrogen phosphide gas is 5 ppm or higher, or when the concentration of the gas is unknown, attending personnel must wear a NIOSH/MSHA approved SCBA, operated in a positive pressure mode. An approved supplied-air respirator with a full face piece or full-face gas mask with a phosphine canister may be worn if the level of gas is determined to be below 5 ppm. Wear dry gloves of cotton or other breathable material when handling magnesium phosphide.
Do not use water at any time to clean up a spill of Magtoxin. Liquids in contact with unreacted pellets will greatly accelerate the production of hydrogen phosphide gas, which could result in a toxic and/or fire hazard.

Return all intact aluminum foil pouches of Magtoxin Prepac Spot Fumigant to original pails or other packaging, which has been suitably constructed and marked according to T.D.G.A. regulations. Notify consignee and shipper of damaged pails.

If the foil pouches have been punctured or damaged so as to leak, they may be temporarily repaired with aluminum tape. Transport the damaged pouches, thus sealed, to an area suitable for pesticide storage for inspection. Caution: The punctured pouches may flash upon opening at some later time. Further instructions and recommendations may be obtained, if required, from DEGESCH America, Inc. and Gardex Chemicals Ltd.

If foil pouches of Magtoxin Prepac Spot Fumigant have been damaged so severely that they cannot be temporarily repaired, these materials may be wet deactivated on site using the procedure described in 13.2. If on-site, wet deactivation is not feasible, the damaged containers should be transported in open vehicles to a suitable area. Wet deactivation may then be carried out as described in 13.2. Alternatively, spillage may be spread out in a secure, placarded area away from inhabited buildings to be deactivated by atmospheric moisture. Care should be taken to ensure that the Magtoxin Prepacs are not carried away by the wind. If desired, they may be weighted down by several inches of sand or soil or by other suitable means. Do not use this procedure during periods of rain or if the soil is wet. After deactivation, the spent Magtoxin Prepacs may be gathered for disposal at a sanitary landfill site.

13.2 Directions for Deactivation by the Wet Method

If the contaminated material is not to be held until completely reacted by exposure to atmospheric moisture, deactivate the product by the "Wet Method" as follows:

13.2.1. Caution: Wear appropriate respiratory protection during wet deactivation of unexposed or incompletely exposed Magtoxin® Prepac Spot Fumigant. Never place Magtoxin Prepacs or dust in a closed container such as a dumpster, sealed drum, plastic bag, etc., as flammable concentrations and a flash of hydrogen phosphide gas are likely to develop. Do not cover the deactivation vessel at any time. Do not dispose of Magtoxin Prepac Spot Fumigant dust in a toilet.

13.2.2 Water is used for the wet deactivation of Magtoxin Prepac Spot Fumigant and other magnesium phosphide fumigants. Detergent solution is not required. Fill several drums or other containers to be used for wet deactivation with water to within 2 to 5 cm (1 to 2 inches) of the top. Do not allow a large headspace above the surface of the water.

13.2.3 Magnesium phosphide reacts very vigorously with water and, therefore, only 1 or 2 unexposed Magtoxin Prepacs should be wet deactivated at one time. Individual Prepacs should be cut from a roll of 5 connected Magtoxin Prepacs rather than attempting deactivation of an entire roll. Unexposed Prepacs will likely ignite if they are allowed to float to the surface of the water. They may be placed into wire baskets or similar containers, weighted and dropped into the water for deactivation. The Prepacs should be submerged to at least 10 to 15 cm (4 to 6 inches) to prevent smoking of the liberated hydrogen phosphide gas.

13.2.4 Reaction of magnesium phosphide with water is practically complete within about 15 to 30 minutes. However, the Magtoxin Prepacs should be totally immersed for at least 6 hours to ensure total hydrolysis. It is suggested that one or more drums or barrels (120 litres) be set up for the first half hour's immersion, until bubbling has practically ceased, after which the Magtoxin Prepacs are transferred to a second drum (120 litre) for the remainder of the wet deactivation period. Caution: Removal of Magtoxin Prepacs from water before they are largely deactivated may result in fire. Deactivated Prepacs may
then be taken to an approved sanitary landfill site for disposal. Dispose of the water at a sanitary landfill or other approved site. Where permissible, the water may be poured out onto the ground. Avoid direct pouring into a storm sewer.

FOR ASSISTANCE, CONTACT:

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Telephone:  540-234-9281/800-330-2525
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E-Mail:  degesch@degeschamerica.com

OR

Gardex Chemicals Ltd.
7 Meridian Road
Etobicoke, Ontario
M9W 4Z6  Canada
Telephone:  416-675-1638
Fax:  416-798-1647

OR

HOT LINE NUMBER
Have the product container label or Applicator’s Manual with you when calling a poison control centre, doctor, or when going for treatment. CONTACT  1-800-308-4856 FOR ASSISTANCE WITH HUMAN OR ANIMAL MEDICAL EMERGENCIES. You may also contact DEGESCH AMERICA, INC. 540-234-9281/1-800-330-2525 or, GARDEX CHEMICALS, LTD. 416-675-1638. For all other chemical emergencies, please contact CHEMTREC – 1-800-424-9300 or Canadian Transport Emergency Centre (CANUTEC) 613-996-6666.
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