

RESTRICTED-USE PESTICIDE
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification

PRODUCT MANUAL

FOR USE WITH

gastoxin® TABLETS

AND

ACCEPTED

NOV 3 1982

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under
EPA Reg. No. 43743-2

gastoxin® PELLETS

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PRODUCT MANUAL FOR **gastoxin**® TABLETS AND **gastoxin**® PELLETS

INTRODUCTION

This booklet has been prepared to assist the user in the safe and effective handling of **gastoxin**® tablets and pellets. As all fumigants are toxic to man and animals if not properly used, all directions for use must be carefully followed. If this is done, the product can be safely handled and effective insect control will be obtained.

PHYSICAL AND CHEMICAL PROPERTIES OF **gastoxin**®

gastoxin® is a formulated product consisting of aluminum phosphide, ammonium bicarbonate, urea, and edible paraffin. Upon exposure to the atmosphere, the ammonium bicarbonate dissociates, forming ammonia, a pungent smelling warning gas, and carbon dioxide, a fire suppressant. Within from one to four hours the active gas hydrogen phosphide (phosphine) begins to evolve as the pellet or tablet slowly decomposes. Hydrogen phosphide has a carbide-like odor and can be readily smelled by most humans at a concentration in the range of 0.02 parts per million. It is a colorless gas with great penetration power due to its high volatility. The threshold limit value for hydrogen phosphide is 0.3 parts per million.

gastoxin® is offered in two forms, tablets and pellets. The tablet is approximately 4/5 inch in diameter. It weighs three grams, and on decomposition releases one gram of hydrogen phosphide. Tablets are packaged either in gas tight tubes and cans or in resealable flasks. Each tube holds 20 tablets and each can holds 15 tubes. Each resealable flask holds 100 or 500 tablets in bulk. The pellet is spherical in form and approximately 3/8 inch in diameter. It weighs 0.6 grams, and on decomposition releases 0.2 grams of hydrogen phosphide. There are 1660 pellets packed in each resealable flask.

The rate of decomposition is dependent on temperature of the commodity and relative humidity of the atmosphere. At temperatures over 68°F. (20°C.) decomposition of both tablets and pellets is completed in approximately 72 hours. As temperature decreases, required exposure time is increased. Fumigation should not be attempted when commodity temperature is below 40°F. (5°C.).

Following decomposition of the tablets and pellets there remains a gray-white "dust" composed almost entirely of non-poisonous aluminum hydroxide, with a trace amount of the undecomposed aluminum phosphide. The "dust" is eliminated when treated raw agricultural commodities are moved, or it can be collected and properly disposed of following the treatment of processed foods.

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HOW **gastoxin**® SHOULD BE STORED

Tablets and pellets are received in wooden cases containing sealed tubes and/or resealable flasks. As long as the tubes, cans, or flasks remain intact, the storage life of the product is unlimited. Storage should be in a dry, locked, ventilated area and out of the reach of children and irresponsible persons.

HOW **gastoxin**® SHOULD BE HANDLED

1. Make certain that the label is intact and legible.
2. Read the label.
3. Open containers of tablets or pellets only in open air.
4. Wear gloves when handling the product.
5. Do not smoke, eat, or drink when handling a pesticide.
6. Use entire contents of a tube once it is opened. Unopened tubes and resealable flasks may be returned to the locked storage area for later use.
7. Wash hands after use of the product.
8. Do not attempt to reuse empty container. Triple rinse with water, crush, and dispose of properly. Bury cans and stoppers. Flasks may be recycled.

PATTERN OF USE

REGISTERED USES: **gastoxin**® tablets and pellets are registered with the U.S. Environmental Protection Agency for the post harvest fumigation of the following:

Raw Agricultural Commodities (can be treated by direct addition) — ~~almonds, barley, brazil nuts, buckwheat, cashews, cocoa beans, cottonseed, dates, flower seed, grass seed, millet, oats, rye, safflower seed, seed and pod vegetables (except soybeans), soybeans, sunflower seed, walnuts, wheat, and vegetable seeds~~

almonds, barley, brazil nuts, buckwheat, cashews, cocoa beans, cottonseed, dates, flower seed, grass seed, millet, oats, rye, safflower seed, seed and pod vegetables (except soybeans), soybeans, sunflower seed, walnuts, wheat, and vegetable seeds; powder, coffee, crackers, dried apples, dried apricots, dried yolk solids, dried milk, dried peaches, dried pears, dried malt, milk chocolate, non dairy creamers, non-fat dried milk cereals, pasta, potato flour, pretzels, primary yeast, processed raisins, sugar, sultanas, tea, and processed nutmeats.

(wheat, paper, and sisal).

TOLERANCES:

Raw Agricultural Commodities (except seed and pod vegetables (except soybeans)) and Animal Feeds — 0.1 ppm; seed and pod vegetables (except soybeans) — 0.01 ppm; Processed Foods — 0.01 ppm.

INSECTS TO BE CONTROLLED:

When used as directed, **gastoxin**® will effectively control all life stages of the following pests: almond moth, angoumois grain moth, bean weevil, cadelle, cigarette beetle, confused flour beetle, dermestids, dried fruit beetle, dried fruit moth, European grain moth, flat grain beetle, granary and rice weevils, Indian meal moth, lesser grain borer, Mediterranean flour moth, pink bollworm, raisin moth, red flour beetle, rusty grain beetle, saw-toothed grain beetle, and tobacco moth.

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MANUAL

TABLETS AND PELLETS

INTRODUCTION

To assist the user in the safe and effective use of gas toxin tablets and pellets. As all fumigants are toxic to man and animals, directions for use must be carefully followed. Properly handled and effective insect control will be achieved.

CHEMICAL PROPERTIES OF gas toxin®

gas toxin consists of aluminum phosphide, ammonia, and kerosene. Upon exposure to the atmosphere, it forms a white, pungent smelling gas. Within from one to four hours (depending on the size of the pellet or tablet) begins to evolve as the pellet or tablet has a carbide-like odor and can be readily detected in the range of 0.02 parts per million. The gas is highly volatile. The phosphide is 0.3 parts per million.

gas toxin tablets and pellets. The tablet is approximately three grams, and on decomposition releases gas. Tablets are packaged either in gas tight tubes and each tube holds 20 tablets and each can holds 15 tubes. The pellet is spherical in form and weighs 0.6 grams, and on decomposition releases gas. There are 1660 pellets packed in each can.

Rate of decomposition is dependent on temperature of the commodity and on the temperature of the atmosphere. At temperatures over 68°F. (20°C.) decomposition is completed in approximately 72 hours. As the temperature is increased, fumigation should be completed in less time. Fumigation should be completed at a temperature below 40°F. (5°C.).

After use of gas toxin tablets and pellets there remains a gray-white residue of aluminum hydroxide, with a trace of phosphide. The "dust" is eliminated when the residue is moved, or it can be collected and properly disposed of.

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HOW gas toxin® SHOULD BE STORED

Tablets and pellets are received in wooden cases containing sealed tubes and cans or resealable flasks. As long as the tubes, cans, or flasks remain intact, the storage life of the product is unlimited. Storage should be in a dry, locked, ventilated area and out of the reach of children and irresponsible persons.

HOW gas toxin® SHOULD BE HANDLED

1. Make certain that the label is intact and legible.
2. Read the label.
3. Open containers of tablets or pellets only in open air.
4. Wear gloves when handling the product.
5. Do not smoke, eat, or drink when handling a pesticide.
6. Use entire contents of a tube once it is opened. Unopened tubes and resealable flasks may be returned to the locked storage area for later use.
7. Wash hands after use of the product.
8. Do not attempt to reuse empty container. Triple rinse with water, crush, and dispose of properly. Bury cans and stoppers. Flasks may be recycled.

PATTERN OF USE

REGISTERED USES: gas toxin® tablets and pellets are registered with the U.S. Environmental Protection Agency for the post harvest fumigation of the following:

Raw Agricultural Commodities (can be treated by direct addition) —

almonds, barley, brazil nuts, buckwheat, cashews, cocoa beans, coffee beans, corn, cottonseed, dates, flower seed, grass seed, millet, oats, peanuts, popcorn, rice, rye, safflower seed, seed and pod vegetables (except soybeans), sesame seed, sorghum, soybeans, sunflower seed, walnuts, wheat, and vegetable seed.

powder, coffee, crackers, dried apples, dried apricots, dried carrots, dried egg yolk solids, dried milk, dried peaches, dried pears, dried spinach, figs, macaroni, malt, milk chocolate, non dairy creamers, non-fat dried milk, noodles, packaged cereals, pasta, potato flour, pretzels, primary yeast, processed spices, prunes, raisins, sugar, sultanas, tea, and processed nutmeats.

flour, paper, and sisal.

TOLERANCES:

Raw Agricultural Commodities (except seed and pod vegetables (except soybeans)) and Animal Feeds — 0.1 ppm; seed and pod vegetables (except soybeans) — 0.01 ppm; Processed Foods — 0.01 ppm.

INSECTS TO BE CONTROLLED:

When used as directed, gas toxin® will effectively control all life stages of the following pests: almond moth, angoumois grain moth, bean weevil, cadelle, cigarette beetle, confused flour beetle, dermestids, dried fruit beetle, dried fruit moth, European grain moth, flat grain beetle, granary and rice weevils, Indian meal moth, lesser grain borer, Mediterranean flour moth, pink bollworm, raisin moth, red flour beetle, rusty grain beetle, saw-toothed grain beetle, and tobacco moth.

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PRECAUTIONS TO BE OBSERVED

1. Never let ~~gas~~ tablets or pellets come in direct contact with liquid or water as this causes the immediate release of hydrogen phosphide.
2. ~~gas~~ should never be used under conditions which would allow the gas concentration to reach the lower level of flammability which is 1.79 per cent by volume (17,900 parts per million). When used according to label directions the amount of gas produced remains far below the lower flammability level.
3. Never confine the product in small gas-proof enclosures such as plastic bags. Such confinement could cause the gas concentration to reach the lower flammability level.
4. Take precautions in areas where copper, brass, or gold are present as corrosion may occur.
5. Never fumigate in areas containing electronic or telephone equipment, photographic film or copy paper. It may be possible to remove such items or protect them from exposure to the gas.
6. Suggested exposures should be observed. A shortened exposure period cannot be compensated for by increased dosage.
7. Hydrogen phosphide has great penetrating power and gas may slowly seep through concrete block walls. See that adjoining areas are not occupied during the fumigation period.
8. Hydrogen phosphide does not layer or stratify. Because of its high volatility and penetrating ability, the enclosure being treated must be sealed as tightly as possible if an effective fumigation is to be expected.
9. Disposal of the "dust" remaining after a space fumigation must be carefully and properly done. See section of DISPOSAL for further information.

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DOSAGE AND EXPOSURE INFORMATION

Hydrogen phosphide is an acute poison and is highly effective against insects. As is true with all fumigants, insect control depends on both dosage and exposure time. Hydrogen phosphide is effective at very low concentrations providing exposure time is long enough. As already stated however, exposure time can not be shortened by increasing dosage. At very high concentrations, hydrogen phosphide can have a narcotic effect on insects which actually reduces mortality.

Because there are a number of factors which alter the effectiveness of a fumigant (e.g. temperature, tightness of seal, type of storage space), a range of dosages and exposure times are suggested. The user must assess the conditions under which the fumigation will be done and determine what dosage best suits his needs.

Suggested Dosage Schedule:

Raw Agricultural Commodities, Bulk Animal Feeds (except Nuts) — 60-180 tablets or 120-300 pellets per 1000 bushels. Dosage for peanuts is 60-125 tablets per 1000 cubic feet; for nuts 30 tablets or 100-200 pellets per 1000 cubic feet of storage space.

Processed Foods — 30-60 tablets or 100-200 pellets per 1000 cubic feet of storage space.

Stored Tobacco — 20-30 tablets or 100-150 pellets per 1000 cubic feet of storage space.

Cereal Mills, Feed Mills, and Warehouses — 20-30 tablets or 100-150 pellets per 1000 cubic feet of storage space.

SUGGESTED EXPOSURE TIMES (for all uses)

Commodity temperature °F.	°C.	Exposure time (Tablets)
below 40	5	Do not fumigate
40-53	5-11	7-10 days
54-59	12-15	5 days
60-68	16-20	4 days
over 68	20	3 days

pellets one day less

Remember: Efficacious results depend on proper dosage, adequate exposure times, correct application techniques and well sealed enclosures.

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APPLICATION PROCEDURES

General:

1. Never fumigate alone.
2. Have proper personal protection equipment on hand and in good working order.
3. Have appropriate gas detection devices available for use as needed.
4. Never fumigate any structure or area unless it is unoccupied.
5. When necessary, make certain to notify police and fire officials having jurisdiction over the area of the planned fumigation.
6. Never fumigate when commodity temperature is below 40°F. (5°C).
7. Aerate finished food for 48 hours before it is offered to the consumer.

For Fumigating Silo Type Storages:

1. Calculate required number of tablets or pellets based on dosage selected and quantity of commodity to be treated.
2. Determine the amount of ventilation in both the basement and on the bin floor where the fumigant will be applied.
3. Open all containers outside the building.
4. Tablets may be applied to grain on the transfer belt by hand. Pellets are best applied using an automatic pellet dispenser. They may be dispensed into the up leg of the elevator from the work room floor, or onto the grain as it travels along the transfer belt on the bin floor.
5. Place a warning sign on the bin cover on the bin floor, and on the bin valve in the basement. Date the sign as to when the fumigation commenced.
6. Each day before work starts, the bin floor and basement should be checked for the presence of gas.
7. Elevator personnel may carry out their normal duties when **gasolux**® is used to treat grain in upright silo storage.

For Fumigating Flat Storages:

1. Make certain that structure is tight enough to be fumigated successfully. Seal structure as needed.
2. Make certain that there are no adjoining structures occupied by man or animals.
3. Determine quantity of tablets or pellets required.
4. During fumigant application leave all doors or other openings open to create a cross ventilation. Application can proceed for 2-4 hours or until the odor of phosphine is detected in the overspace.
5. Apply the tablets or pellets by using a probe. Make probes every 4-5 feet horizontally across the grain in both directions. The number of tablets or pellets used per probe is determined by dividing the amount of fumigant to be used by the number of probes to be made. The fumigant is dropped in the probe at intervals as the pipe is withdrawn from the grain.

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APPENDIX

6. A plastic tarpaulin may be pulled over the grain surface following application of the fumigant. This reduces convective currents and increases the effectiveness of the fumigant. Care must be taken to see that the plastic is removed when the fumigation is completed. (No more than 3-6 days or sweating of the grain may occur).
7. Close and seal all external openings.
8. Placard and lock entrances.
9. Following the exposure period, open doors and windows creating a cross draft to aid in aeration.
10. Make certain all warning signs are removed when aeration is complete.

For Fumigation of Railcars:

1. Boxcars and hopper cars of bulk raw agricultural commodities and animal feeds are fumigated in the same manner as are silos or flat storages. The tablets or pellets may be added to the commodity as it flows into the railcar, be placed on the floor of the empty car, be placed on the surface of the commodity, or probed into the commodity after loading is completed.
2. Processed foods and bagged raw commodities and animal feeds are fumigated by placing the tablets or pellets in moisture permeable envelopes or on trays, which in turn are fastened to a substantial support within the car. Care must be taken to see that the fumigant or its reacted residue does not come in contact with processed foods.
3. Close and seal all hatches or doors. On hopper cars, make sure that the vents at the end of the car are sealed with masking tape. Placards approved by the Department of Transportation must be applied to each door of box cars and near the ladder on hopper cars as well as on the top hatch covers. Date signs as to when fumigation commenced and when the car may be opened.
4. Notify the consignee that the car is to be received under fumigation.

For Fumigation Under Tarpaulins:

1. Cover the stack of product to be fumigated with polyethylene (1.5-2 mil is satisfactory). Secure the edges of the tarpaulin to the floor using sand snakes, tape, or other suitable material.
2. Spread tablets or pellets on trays and insert under the edge of the tarpaulin. Reseal tarpaulin to floor in that location.
3. Placard stack on all exposed sides indicating that fumigation is in progress. Date and sign warning placard indicating when cover may be removed.
4. Maintain adequate ventilation around stack at all times. If this is done, workers do not have to vacate the premises.
5. Following the exposure period, collect all residual "dust" and dispose of it according to label directions. Remove tarpaulins if desired, but at any rate, all warning signs must be removed and destroyed.

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For Fumigation of Grain, Feed Mills, and Warehouses:

1. Seal the enclosure to be treated using appropriate sealing materials (except exit door).

2. Where necessary, notify police and fire officials having jurisdiction over the area.

3. Determine dosage required and calculate the amount of fumigant needed. (Open all containers out of doors).

4. Spread tablets or pellets on kraft paper trays laid on the floor, with application starting at the farthest point from the exit door.

5. Lock and seal exit door. Post guards if required.

6. Place all entrances with warning signs.

7. Notify local hospital that fumigation is underway and explain the fumigant being used.

8. When fumigation is completed, open all doors and windows to commence aeration. It will be necessary to wear a gas mask if the building must be entered before aeration is complete.

9. Using gas detection device, determine that all gas is gone before turning structure back for occupancy.

10. Collect and properly dispose of all fumigant "dust". Remove and discard all warning placards.

For Intrastate Ship Fumigation:

IMPORTANT

Shipboard, intrastate ship or shipboard fumigation is also governed by U.S. Coast Guard Regulations. Refer to and comply with these regulations prior to fumigation.

PROCEDURES

Prefumigation Procedures

1. Prior to fumigating a vessel for intrastate fumigation, the Master of the vessel or his representative, and the fumigator must determine whether the vessel is suitably designed and configured so as to allow for safe occupancy by the ship's crew throughout the duration of the fumigation. If it is determined that the design and configuration of the vessel does not allow for safe occupancy by the ship's crew throughout the duration of the fumigation, then the vessel will not be fumigated unless all crew members are removed from the vessel. The crew members will not be allowed to reoccupy the vessel until the vessel has been properly averted and a determination has been made by the Master of the vessel and the fumigator that the vessel is safe for occupancy.
2. The person responsible for the fumigation must notify the Master of the vessel or his representative, of the requirements relating to personal protection equipment, detection equipment, and that a person qualified in the use of this equipment must accompany the vessel with cargo under fumigation. Emergency procedures, cargo ventilation, periodic monitoring, and inspections, and first aid measures must be discussed with and understood by the Master of the vessel or his representative.
3. During the fumigation or until a manned vessel leaves port or the cargo is averted, the person in charge of the fumigation shall ensure that a qualified person using gas or

4. Calculate the dosage of gas required based on 33 tablets or 165 pellets per 1000 cubic feet of hold volume. Do not consider whether the hold will be slack or full.
5. Apply the tablets or pellets as evenly as possible over the grain surface. Where possible, step the fumigant below the surface or probe it in to the desired depth.
6. Make certain that all appropriate local authorities have been notified of the fumigation.
7. Post appropriate danger signs on all such avenues of entrance to the holds.
8. Lock and/or secure all avenues normally used to enter the holds. Using appropriate sealing materials, seal all openings into the areas which are to be fumigated (including the main hatch openings). On tankers, be sure that all pressure relief systems are adequately sealed.
9. The intrastate fumigation procedures may continue only after the vessel has been inspected as outlined above and it has been ascertained that the design and configuration of the vessel will permit the ship's crew to remain on board without undue hazard from the treatment.
10. Lock and/or secure all avenues normally used to enter the holds. Using appropriate sealing materials, seal all openings into the areas which are to be fumigated (including the main hatch openings). On tankers, be sure that all pressure relief systems are adequately sealed.

NOTE: For additional use and safety information refer to other sections of this booklet and the labels.

Directions for Use (dry bulk carriers and tankers)

1. Remove and dispose of all sealing materials and warning signs.
2. Remove and dispose of all sealing materials and warning signs.

detector.

1. If necessary to enter holds prior to discharge, test spaces directly above grain surface for fumigant concentration, using appropriate gas detection and personnel safety equipment. Do not allow entry to fumigated areas without personal safety equipment, unless fumigant concentrations are at safe levels, as indicated by a suitable

Precautions and Procedures During Discharge

1. Using appropriate gas detection equipment, monitor spaces adjacent to areas containing fumigated cargo and all regularly occupied areas for fumigant leakage. If leakage is detected, the area should be evacuated of all personnel, ventilated, and action taken to correct the leakage before allowing the area to be occupied.
2. Do not enter fumigated areas except under emergency conditions. If necessary to enter a fumigated area, appropriate personal protection equipment must be used. NEVER enter fumigated areas alone. At least one other person, wearing personal protection equipment, should be available to assist in case of an emergency.

Precautions and Procedures During Voyage

Personal protection equipment means a gas mask or respirator for the fumigator, jointly approved by the Mining Enforcement and Safety Administration and the National Institute of Occupational Safety and Health.

qualified in their operation be on board the vessel during the voyage.

leaves port, the person in charge of the vessel shall insure that at least two units of personal protection equipment and one gas or vapor detection device, and a person

4. If the fumigation is not completed and the vessel is not a manned vessel, the person in charge of the vessel shall insure that at least two units of

corrective action can be taken.

or shall inform the Master of the vessel, or his representative, of the leakage so that

and all regularly occupied spaces for fumigation leakage. If leakage of the fumigant is

vapor detection equipment tests spaces adjacent to fumigated cargo

6. Close, secure and seal the hatch covers or tank covers and butterworths as soon as the fumigant has been applied.

7. Post appropriate danger signs in conspicuous locations on the outside of all hatch and tank covers.

8. Monitor all areas of the vessel which are, or could be occupied by a crew member for the presence of hydrogen phosphide until the vessel leaves port. Check hatch and/or tank covers for leakage and reseal as necessary.

DISPOSAL OF RESIDUAL "DUST" AND CONTAINERS

When **gastodin**® is used to fumigate raw agricultural commodities and bulk animal feed there are no special disposal procedures. When the commodity is moved, the residual "dust" is further decomposed and removed along with the grain dust.

When processed foods are fumigated and when the fumigant is used for space fumigations, the "dust" must be collected and disposed of. Disposal is accomplished by burying or by slowly adding the "dust" to a bucket of water containing a small amount of wetting agent. A five gallon bucket should be 3/4 full of water and wetting agent. The "dust" is stirred into the water until a slurry is formed and the "dust" sinks. It is then merely clay and is no longer a contaminant.

The cans, tubes, and stoppers should be buried. Triple rinse the cans and tubes before crushing and burial. Flasks may be recycled.

EQUIPMENT FOR PERSONAL PROTECTION

Due to the manner in which **gastodin**® is formulated, it is not necessary to wear a gas mask when it is applied. If directions for use are followed, the applicator will not be exposed to harmful concentrations of gas. Even so, it is mandatory that at least two approved gas masks be on the job site and available for immediate emergency use.

It is a federal requirement that gas masks be fitted with a canister of the same manufacturer and designed to offer respiratory protection against the specific gas being used.

It will be necessary to don a gas mask if:

- a) a structure under fumigation must be entered in case of an emergency.
- b) a structure must be entered to commence aeration procedures.

GAS DETECTION DEVICES

There are several gas detection devices available which the fumigator can use to determine gas concentrations. The devices consist of a pump designed to draw a specific volume of air, and a graduated glass tube filled with a chemical that reacts with hydrogen phosphide. In use, the gas laden air is drawn through the tube and the concentration can be read from the amount of discoloration which results.

There are two types of tubes available: high range tubes for assessing the effectiveness of a treatment, and low range tubes for assuring worker safety.

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FIRST AID INSTRUCTIONS

Hydrogen phosphide is a very toxic gas to all forms of animal life, and exposure to even small amounts should be prevented. Poisoning must result from ingestion or inhalation as hydrogen phosphide is not absorbed through the skin. It is also insoluble in water, fats, and oils.

Symptoms of Poisoning:

Exposure to hydrogen phosphide produces symptoms of poisoning, the severity of which is dependent on the concentration involved. Mild poisoning results in fatigue, nausea, pressure or pain in the chest, ringing in the ears, and uneasiness. As hydrogen phosphide is not a chronic poison, these symptoms will readily disappear with rest and fresh air.

Greater quantities of gas produce such symptoms as vomiting, stomach ache, diarrhea, disturbance in equilibrium, and dyspnea (difficulty in breathing). Very high concentrations quickly cause cyanosis (bluish-purple skin color), agitation, ataxia, anemia (subnormal blood oxygen content), unconsciousness, and death. Death can occur very quickly or be delayed several days as a result of pulmonary edema, and collapse, by paralysis of the central respiratory system. Because of heavy poisoning, disturbance in liver and kidney function (hematuria, proteinuria, uremia, jaundice), and arrhythmia can also occur.

First Aid Treatment:

Should exposure to hydrogen phosphide be documented or suspected:

1. Call a physician immediately.
2. Remove patient from gas atmosphere.
3. Have patient lay down, keeping him warm and comfortable. Treat as for shock.
4. Make no antidotal use of fats, oil, butter, or milk. Do not administer atropine as it is contraindicated.
5. Commence artificial respiration if breathing has ceased.
6. Even when exposure to low concentrations of hydrogen phosphide have been documented or suspected, the individual involved should rest for 24 hours and under no circumstances should he resume any work dealing with fumigation during that period.

ADVICE TO PHYSICIANS:

To be used in accordance with his own best judgement.

1. Mild cases of poisoning may not manifest themselves for up to 24 hours and the following is recommended:
 - a) Complete bed rest for 1-2 days during which time the patient should be kept warm and quiet.
 - b) As poisoning is not chronic, symptoms will disappear by themselves.
2. Severe poisoning will be readily apparent. Steroid therapy should be considered when pulmonary edema is observed, and close medical supervision is suggested. Blood transfusions may also be required.

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