



PESTCON SYSTEMS, INC.

MATERIAL SAFETY DATA SHEET: ALUMINUM PHOSPHIDE, FUMITOXIN*

DISTRIBUTOR:
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Wilson, N.C. 27893
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MANUFACTURER:
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Beijing, China 100045

CHEMTREC EMERGENCY NO: 800-424-9300
202-483-7616

HAZARDOUS INGREDIENTS INFORMATION

PRODUCT NAME: FUMITOXIN* Tablets, Pellets, Bags
Hydrogen Phosphide (Phosphine, PH₃) Gas

CAS Number:
20859-73-8
7803-51-2

FUMITOXIN* aluminum phosphide reacts with water to produce Phosphine, Hydrogen Phosphide, PH₃:



FUMITOXIN* aluminum phosphide is formulated with 55% aluminum phosphide and also contains ammonium carbamate and inert ingredients. Ammonium carbamate releases ammonia and carbon dioxide as follows:



NH₂COONH₄CAS NO. 1111-78-0
NH₃.....CAS NO. 7664-41-7
CO₂CAS NO. 124-38-9

INHALATION EXPOSURE LIMITS:

<u>COMPONENT</u>	<u>OSHA PEL</u> (ppm)	<u>ACGIH TLV</u>		<u>IDLH</u> (ppm)
		<u>TWA</u> (ppm)	<u>STEL</u> (ppm)	
Hydrogen Phosphide	0.3	0.3	1.0	50
Ammonia	50	25	35	300
Carbon Dioxide	5000	5000	30,000	40,000

PHYSICAL CHARACTERISTICS

Boiling Point:

AIP >1000°C
PH₃ -87.7°C

Specific Gravity of Vapors (Air = 1):

AIP N/A
PH₃ 1.17

Vapor Pressure:

AIP 0mm Hg
PH₃ 40mmHg @ -129.4°C

Solubility in Water:

AIP Insoluble, reacts
PH₃ 26cc in 100 ml water at 17°C

Appearance and Odor:

Fumitoxin Aluminum phosphide has a greenish gray color and the hydrogen phosphide (phosphine, PH₃) gas produced by this chemical has an odor described as similar to garlic, carbide or decaying fish and is colorless.

Specific Gravity:

AIP 2.85

Melting Point:

AIP >1,000°C
PH₃ -133.5°C

FIRE AND EXPLOSION HAZARD DATA

Flash Point:

Aluminum phosphide is not flammable. However, it will react readily with water to produce hydrogen phosphide (phosphine, PH₃) gas which may ignite spontaneously in air at concentrations above its LEL of 1.8% v/v. UEL of hydrogen phosphide is not known.

Extinguishing Media:

Suffocate flames with sand, carbon dioxide or dry extinguishing chemicals.

Special Fire Fighting Procedures:

Do not use water on aluminum phosphide fires.

Respiratory Protection:

Wear NIOSH/MSHA approved SCBA or equivalent respiratory protection.

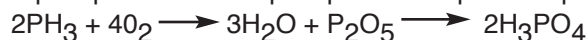
Protective Clothing:

Wear gloves when handling FUMITOXIN tablets and pellets.

Unusual Fire and Explosion Hazards:

Do not confine spent or partially spent aluminum phosphide residues. Any hydrogen phosphide (phosphine) gas released may ignite. Do not pile unreacted tablets, pellets or bags; or allow these products to come in contact with liquid water. Open containers of FUMITOXIN* in open air only and never in a flammable atmosphere.

Fires containing hydrogen phosphide or metal phosphides will produce phosphoric acid.



REACTIVITY DATA

Stability:

Fumitoxin Aluminum phosphide is stable to most chemical reactions, except for hydrolysis. It will react with moist air, liquid water, acids and some other liquids to produce toxic and flammable hydrogen phosphide (phosphine, PH₃) gas.

Incompatibility:

Avoid contact with water and oxidizing agents.

Corrosion:

Hydrogen phosphide gas may react with certain metals and cause corrosion, especially at higher temperatures and relative humidities. Metals such as copper, brass and other copper alloys, and precious metals such as gold and silver are susceptible to corrosion by phosphine. 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 may be damaged by this gas. 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.

Hazardous Polymerization:

Will not occur.

HEALTH HAZARD INFORMATION

Routes of Entry:

Aluminum phosphide and hydrogen phosphide gas from FUMITOXIN are not absorbed dermally. Primary routes of exposure are inhalation and ingestion.

Acute and Chronic Health Hazards:

Fumitoxin is a highly acute toxic substance. Hydrogen phosphide gas LC₅₀ is about 190 ppm for a one-hour inhalation exposure. The acute oral toxicity of the Aluminum phosphide was found to be 11.5mg/kg of body weight.

FUMITOXIN is not known to cause chronic poisoning.

Carcinogenicity:

Fumitoxin is not known to be carcinogenic and is not listed as such by NTP, IARC or OSHA.

Signs and Symptoms of Exposure:

Aluminum phosphide tablets, pellets or bags react 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 occur within a few hours to several days resulting in pulmonary edema (fluid in lungs) and may lead to dizziness, cyanosis (blue or purple skin color), unconsciousness, and death.

Emergency and First Aid Procedures:

Symptoms of overexposure are headache, dizziness, nausea, difficult breathing, vomiting, and diarrhea. In all cases of overexposure get medical attention immediately. Take victim to a doctor or emergency treatment facility.

If the gas or dust from aluminum phosphide is inhaled:

Get exposed person to fresh air. Keep warm and make sure person can breath freely. If breathing has stopped, give artificial respiration by mouth-to-mouth or other means of resuscitation. Do not give anything by mouth to an unconscious person.

If aluminum phosphide pellets, tablets or powder are swallowed:

Drink or administer one or two glasses of water and induce vomiting by touching back of the throat with finger, or, if available, syrup of ipecac. Do not give anything by mouth if the victim is unconscious or not alert.

If powder or granules of aluminum phosphide get on skin or clothing:

Brush or shake material off clothes 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.

If dust from pellets or tablets gets in eyes:

Flush with plenty of water. Get medical attention.

PRECAUTIONS FOR SAFE HANDLING**Spill Cleanup Procedures:**

If possible, dispose of spilled FUMITOXIN by use according to label instructions. Freshly spilled material which has not been contaminated by water or foreign matter may be replaced into original containers. Punctured flasks or containers may be temporarily repaired using aluminum tape. If the age of the spill is unknown or if the Fumitoxin has been contaminated with soil, debris, water, etc., gather up the spillage in small open buckets having a capacity no larger than about 1 gallon. Do not add more than about 1 to 1.5 kg (2 to 3 lbs) to a bucket. If on-site wet deactivation is not feasible, transport the uncovered buckets in open vehicles to a suitable area. Wear gloves when handling Fumitoxin.

Respiratory protection may be required during cleanup of spilled material. If the concentration of hydrogen phosphide is unknown, NIOSH/MSHA approved SCBA or its equivalent must be worn.

Small amounts of spillage, from about 4 to 8 kg (9 to 18 lbs) may be spread out over the ground in an open area to be deactivated by atmospheric moisture. Alternatively, spilled Fumitoxin may be deactivated by the wet method as described in the following.

Wet Deactivation of Spilled FUMITOXIN:

1. Deactivating solution is prepared by adding the approximate amount of low sudsing detergent to water in a drum or other suitable container. A 2% solution or 4 cups of detergent in 30 gallons is suggested. The container should be filled with deactivating solution to within a few inches of the top.

2. The material is added slowly to the deactivating solution and stirred so as to thoroughly wet all of the Fumitoxin. This should be carried out in open air and respiratory protection may be required.
3. No more than about 45 to 50 lbs of Fumitoxin should be added to 15 gallons of water-detergent mixture.
4. Allow the mixture to stand, with occasional stirring, for about 36 hours. The resultant slurry will then be safe for disposal.
5. Dispose of the slurry of deactivated material, with or without preliminary decanting, at a sanitary landfill or other suitable site approved by local authorities. Where permissible, this slurry may be poured into a storm sewer or out onto the ground.

Precautions to be Taken in Handling and Storage:

1. Store in a dry, well ventilated area, away from heat and under lock and key. Keep away from irresponsible people and children. Post as a pesticide storage area. Do not contaminate water, food or feed by storing pesticides in the same area used to store these commodities.
2. Do not store in buildings where humans or domestic animals reside.
3. Fumitoxin tablets and pellets are supplied in relatively gas tight resealable aluminum flasks. Do not expose the product to atmospheric moisture any longer than is necessary. Reseal tightly before returning flasks to storage; mark the flask opened and partially used.
4. Fumitoxin bags that are supplied in tins are non-resealable and must be completely used when opened.

Fumitoxin bags that are supplied in metal drums do not have to be completely used as long as the bag is not removed from the foil pouch or the foil pouch is not opened. Remove the number of pouches required and reseal the metal drum.

5. The shelf life of Fumitoxin is virtually unlimited as long as the containers are kept tightly sealed.

FUMITOXIN IS A RESTRICTED USE PESTICIDE DUE TO THE ACUTE INHALATION TOXICITY OF HIGHLY TOXIC HYDROGEN PHOSPHIDE (PHOSPHINE, PH₃) GAS AND IS 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. READ AND FOLLOW EPA ACCEPTED LABELING BEFORE USING FUMITOXIN* ALUMINUM PHOSPHIDE PRODUCTS.

FOR ASSISTANCE:

Contact - Pestcon Systems, Inc.

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or ChemTrec: 800-424-9300

SHIPPING DATA

D.O.T. Shipping Name: Aluminum phosphide

Hazard Class or Division: 4.3

Identification Numbers: UN1397

Packing Group: I

Labels required: Dangerous When Wet/Poison

Product Number: 5857

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