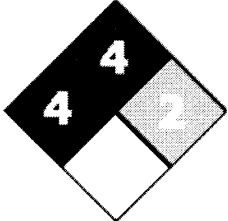







# Material Safety Data Sheet

## United Phosphorus, Inc.

NFPA	PPE		
			

Issued Date 22-Aug-2007

Revision Date 19-Nov-2009

Revision Number: 4

### 1. PRODUCT AND COMPANY IDENTIFICATION

**UPI**  
 630 Freedom Business Center  
 Suite 402  
 King of Prussia, PA 19406

**Emergency Telephone Number**  
 Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887  
 Medical: Rocky Mountain Poison Control Center  
 (866) 673-6671 (24hrs)

Company Information

UPI

Contact Information

Customer Service  
 R&D Technical Service

Phone Number

1-800-438-6071  
 610-878-6100

Available Hrs

8:00 am to 5:00 pm EST  
 8:00 am - 5:00 pm (EST)

**Product Name**  
**Recommended Use**  
**Product Code**

WEEVIL-CIDE® Tablets, WEEVIL-CIDE® Pellets  
 Fumigant  
 12U-142

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

Aluminum phosphide - reacts with water to produce phosphine gas (PH<sub>3</sub>).  
Ammonium carbamate releases ammonia and carbon dioxide.

Dangerous when wet  
Fatal if swallowed or inhaled.

When sealed containers are opened contact with the moisture in the air will cause phosphine gas to be released.  
Phosphine is spontaneously flammable in air.

### DANGER!

**Appearance** light grey, to, Greenish.

**Physical State** Solid. Pellet/tablet.

**Odor** Garlic like. Pure phosphine gas is odorless but a garlic odor might be detected due to a contaminant. Since odor may not be detected under certain circumstances, the absence of a garlic odor does not mean that phosphine gas is absent..

### Potential Health Effects

- Inhalation
- Ingestion
- Skin contact

### Acute Effects

**Eyes**  
**Skin**  
**Inhalation**  
**Ingestion**

Phosphine gas is odorless. Accidental ingestion of aluminum phosphide or inhalation of phosphine gas have been reported to produce CNS depression, pulmonary edema, respiratory distress syndrome, cardiac dysrhythmias, seizures, liver injury and renal failure.  
Irritating to eyes.  
Irritating to skin.  
Fatal if inhaled - Do not breathe mist/vapors..  
Fatal if swallowed - Do not eat, drink, or smoke while handling this product. .

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients Name

Chemical Name	CAS-No	Weight %	OSHA PEL
Ammonium carbamate	1111-78-0	>20	N/A
Aluminum phosphide	20859-73-8	60	N/A

## 4. FIRST AID MEASURES

### Eye Contact

Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye.

### Skin Contact

Brush or shake off material. Wash contaminated skin with soapy water in a well ventilated area.  
Call poison control center or doctor for treatment advice.

**12U-142 - WEEVIL-CIDE® Tablets, WEEVIL-CIDE® Pellets**

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<b>Inhalation</b>	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration. Call a physician or Poison Control Centre immediately
<b>Ingestion</b>	Immediate medical attention is required Call a physician or Poison Control Center immediately Do not induce vomiting unless told to do so by a poison control center or doctor Vomiting may off-gas and release phosphine, which could pose a risk of secondary contamination. Do not give water (potential additional formation of phosphine) unless authorized by a physician.
<b>Notes to Physician</b>	Aluminum phosphide- This product reacts with moisture from air, water, acids and many other liquids to release hydrogen phosphide (phosphine) gas. Symptoms of severe poisoning may occur within a few hours to several days. Phosphine poisoning may result in; pulmonary edema, liver elevated serum GOT, LDH and alkaline phosphatase, reduced prothrombin, hemorrhage and jaundice, and kidney hematuria and anuria. Pathology is characterized by hypoxia.

## 5. FIRE-FIGHTING MEASURES

### Flammable Explosive Properties

<b>Flash Point</b>	Aluminum phosphide - is not flammable. However, it reacts readily with water to produce hydrogen phosphide (phosphine, PH <sub>3</sub> ) gas which may ignite spontaneously in air concentrations above the LEL of 1.8% v/v.
<b>Autoignition Temperature</b>	Not available

**Flammability Limits in Air**  
Lower 1.8% v/v

### Extinguishing Media

Carbon dioxide (CO<sub>2</sub>), Dry powder, Dry chemical, Sand

### Fire/Explosion Hazard

Alphos = Hydrogen phosphide (Phosphine)/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 personal injury. Never allow the build-up of hydrogen phosphide to exceed explosive concentrations. Containers of metal phosphides should be opened in open air and never in a flammable atmosphere. Do not confine spent or partially spent dust from metal phosphide fumigants as slow release of the hydrogen phosphide from these materials may result in formation of an explosive atmosphere. Spontaneous ignition may occur if large quantities of aluminum phosphide are piled in contact with liquid water. Fires containing hydrogen phosphide or metal phosphides will produce phosphoric acid by the following reaction:  $2\text{PH}_3 + 4\text{O}_2 = \text{H}_2\text{O} + \text{P}_2\text{O}_5 = 2\text{H}_3\text{PO}_4$

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**Hazardous Combustion Products**

Phosphine gas.

**NFPA**

**Health 4**

**Flammability 4**

**Instability 2**

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions**

Remove all sources of ignition. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

**Environmental Precautions**

Do not flush into surface water or sanitary sewer system. Should not be released into the environment.

**Methods for Clean-up**

Do not use water at any time during clean-up . Wear gloves when handling aluminum phosphide . Damaged aluminum flasks should be transferred to a sound dry metal container and immediately seal and properly label as aluminum phosphide. Follow all label instructions for disposal of residual material and/or empty containers. .

**7. HANDLING AND STORAGE**

**Handling**

Keep out of reach of children. Do not eat, drink or smoke when using this product. Remove all sources of ignition. Wear personal protective equipment. It is recommended that the gas-tight, aluminum flask be opened in open air or near a fan, which exhausts outside immediately. Never open in a flammable atmosphere as the product may, although rare, flash. When opening, point container away from the face and body. These precautions will reduce the applicators potential for exposure to hydrogen phosphide (phosphine) gas. Do not expose product to atmospheric moisture any longer than is necessary. .

**Storage**

Store in cool/well-ventilated place. Store in original container. . Keep away from heat and sources of ignition. Do not store in buildings where humans or domestic animals reside..

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure Guidelines**

<b>Chemical Name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>
Aluminum phosphide	1 mg/m <sup>3</sup> Respirable fraction.	

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**Engineering Controls**

Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems. Use equipment/monitors for the detection of phosphine gas.

**Personal Protective Equipment**

**Eye/face Protection**

Where there is potential for eye contact have eye flushing equipment available. Eye contact should be avoided through the use of chemical safety glasses, goggles, or a faceshield selected in regard to exposure potential.

**Skin Protection**

Wear protective gloves/clothing.

**Respiratory Protection**

A NIOSH/MESA approved full face mask with approved canister for phosphine may be employed for concentrations up to 15 ppm. At concentrations above that level, or when concentration is unknown, NIOSH/MESA approved SCBA or equivalent must be worn.

**General Hygiene Considerations**

Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Wear respiratory protection.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**

light grey to Greenish

**Odor**

Garlic like Pure phosphine gas is odorless but a garlic odor might be detected due to a contaminant. Since odor may not be detected under certain circumstances, the absence of a garlic odor does not mean that phosphine gas is absent.

**Physical State**

Solid Pellet/tablet

**pH**

No data available

**Boiling Point/Range**

Not available

**Melting Point/Range**

Not available

**Specific Gravity**

2.85

**Solubility**

Insoluble

**Evaporation Rate**

Not available

**Vapor Pressure**

Not available

**Vapor Density**

Not available

**VOC Content**

Not available

**Viscosity**

Not available

**Molecular Weight**

No data available

**Bulk Density**

No data available

**Percent Solids**

Not available

**Percent Volatiles**

Not available

**10. STABILITY AND REACTIVITY**

**Stability**

This product is stable to most chemical reactions except for hydrolysis. A component of this product, aluminum phosphide, reacts with moisture from the air, water, acids and many other liquids to produce toxic and flammable hydrogen phosphine gas. Pure hydrogen phosphide (phosphine) gas is practically insoluble in water, fats and oils and is stable at normal fumigation temperatures.

**Conditions to Avoid**

Exposure to moisture. Protect from water.

