

# DOUGLAS PRODUCTS AND PACKAGNG

## Safety Data Sheet PH3 Pellets and Tablets

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### SECTION 1: Identification

#### 1.1 Product identifier

Product name PH3 Pellets and Tablets

Substance name Aluminum Phosphide

#### 1.3 Recommended use of the chemical and restrictions on use

AN APPROVED APPLICATORS MANUAL ACCOMPANIES THESE PRODUCTS. REFER TO THE APPLICATORS MANUAL FOR DETAILED PRECAUTIONS, RECOMMENDATIONS AND DIRECTIONS OF USE.

#### 1.4 Supplier's details

Name Douglas Products and Packagng  
Address 1550 East OLD 210 Highway  
Liberty, MO 64068-9459  
USA

Telephone 816.781.4250  
Fax 816.781.1043  
email douglasproducts@douglasproducts.com

#### 1.5 Emergency phone number(s)

Chemtrec (800) 424-9300

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### SECTION 2: Hazard identification

#### 2.1 Classification of the substance or mixture

##### GHS classification in accordance with OSHA (29 CFR 1910.1200)

- Substances and mixtures which, in contact with water, emit flammable gases (chapter 2.12), Cat. 1
- Acute toxicity, inhalation (chapter 3.1), Cat. 2
- Hazardous to the aquatic environment - acute hazard (chapter 4.1), Cat. 1

#### 2.2 GHS label elements, including precautionary statements

##### Pictogram



##### Signal word

**Danger**

##### Hazard statement(s)

H261 In contact with water releases flammable gas  
H330 Fatal if inhaled  
H260 In contact with water releases flammable gases which may ignite spontaneously  
  
H400 Very toxic to aquatic life

# Safety Data Sheet

## PH3 Pellets and Tablets

### Precautionary statement(s)

P231+P232	Handle under inert gas. Protect from moisture
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378	In case of fire: Use ... to extinguish.
P402+P404	Store in a dry place. Store in a closed container.
P501	Dispose of contents/container to ...
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P284	[In case of inadequate ventilation] wear respiratory protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310	Immediately call a POISON CENTER/doctor/...
P320	Specific treatment is urgent (see ... on this label).
P403+P233	Store in a well ventilated place. Keep container tightly closed.
P405	Store locked up.
P223	Do not allow contact with water.
P335+P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P273	Avoid release to the environment.
P391	Collect spillage.

### 2.3 Other hazards which do not result in classification

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Substance name	Aluminum Phosphide
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#### Hazardous components

##### 1. Aluminum phosphide

Concentration	> 0 - <= 60 %
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Other names / synonyms	ALUMINIUM PHOSPHIDE; Aluminum phosphide; ALUMINUMPHOSPHIDE
EC no.	244-088-0
CAS no.	20859-73-8
Index no.	015-004-00-8

##### 2. Ammonium carbonate

Concentration	> 0 - <= 20 %
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Other names / synonyms	Ammonium carbonate; AMMONIUMCARBONATE
CAS no.	506-87-6

##### 3. Other inert ingredients

Concentration	> 0 - <= 20 %
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Other names / synonyms	Other inert ingredients
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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

# Safety Data Sheet

## PH3 Pellets and Tablets

### General advice

ALUMINUM PHOSPHIDE (ALP) REACTS WITH MOISTURE AND WATER TO PRODUCE PHOSPHINE GAS (PH<sub>3</sub>). DANGER TOXIC WHEN GAS FORMS MAY SMELL LIKE GARLIC SINCE ODOR MIGHT NOT BE DETECTED. WHEN CONTAINER IS OPENED, THE CONTENTS MAY REACT WITH MOISTURE IN THE AIR AND CAUSE A RELEASE OF PHOSPHINE GAS WHICH WILL SPONTANEOUSLY BURN IN AIR. INGESTION OF TABLETS, PELLETS OR DUST WILL BE HARMFUL OR FATAL.

DELAYED OR OTHER HEALTH EFFECTS: PHOSPHINE POISONING MAY TAKE UP TO SEVERAL DAYS.

BE AWARE THAT ALUMINUM PHOSPHIDE REACTS WITH MOISTURE. SECURE PPE BEFORE THE RESCUE.

### If inhaled

Move to fresh air. If not breathing, give rescue breathing. If breathing is difficult give oxygen. Seek medical attention if breathing is still difficult.

### In case of skin contact

Brush off your clothing and skin! Remove contaminated clothing and place into plastic bag and seal for disposal. Use soap and water to remove from the skin.

### In case of eye contact

Flush eyes with water immediately while holding eyelids open. Remove contacts, if worn, after initial flushing and continue flushing for at least 15 minutes. Seek medical attention if irritation persists.

### If swallowed

If swallowed, get medical attention immediately. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person.

### Personal protective equipment for first-aid responders

First responders need to wear full-bunker gear with SCBA, never enter a confined space unless fully protected with proper personal protective equipment (PPE).

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

NOTE TO PHYSICIAN: Aluminum phosphide reacts with moisture to release hydrogen phosphide (Phosphine gas). Symptoms of severe poisoning may occur within a few hours up to several days. Phosphine poisoning may result in pulmonary edema, liver elevated serum GOT, LDH and alkaline phosphate, reduced prothrombin, hemorrhage and jaundice and kidney hematuria and anuria. Pathology is characterized by hypoxia.

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

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

### 5.2 Specific hazards arising from the chemical

DO NOT USE WATER!

### 5.3 Special protective actions for fire-fighters

MAKE SURE THAT YOU HAVE READ THE APPLICATORS MANUAL! REMOVE ALL SOURCES OF IGNITION, PROVIDE ADEQUATE VENTILATION.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

## Safety Data Sheet

### PH3 Pellets and Tablets

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

Eyes: Wear safety goggles or safety glasses to prevent contact. Suggest using single use safety goggles or clean between use!

Body: Long sleeve shirts, long pants, socks, rubber boots and dry cotton gloves. Suggest using as much disposable chemical resistant suit and hat, rubber booties, dry cotton gloves.

Hands: Dry cotton gloves (disposable).

Respiratory: Wear an approved NIOSH/MSA full face mask respirator that provides protection from this product if phosphine is released. Suggest that you use disposable approved respiratory mask with hydrogen phosphide cartridge or properly clean before use and store in a sealed plastic bag.

Other: After removal of application clothing brush off any dust left on your clothing. Wash your hands, do not eat, drink or smoke until you have removed all source of product.

#### 6.2 Environmental precautions

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

#### 6.3 Methods and materials for containment and cleaning 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 dry metal container and immediately sealed and properly labeled as aluminum phosphide. Follow all label instructions for disposal of residual material and/or empty containers.

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## SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Extreme caution must be used if package is damaged in shipment. Follow the applicators manual of opening the container away from the body. Wear dry cotton gloves. KEEP AWAY FROM CHILDREN! Do not get into eyes. Do not taste or swallow. Wash thoroughly after handling. Do not breathe vapor or fumes.

KEEP AWAY FROM CHILDREN! STORE IN ORIGINAL LABELED CONTAINER. KEEP IN COOL AND DRY AREAS. MAKE SURE THAT THE CONTAINERS DO NOT PRESSURIZE DUE TO EXTREME HEAT.

#### 7.2 Conditions for safe storage, including any incompatibilities

CONSIDER THE POTENTIAL HAZARDS OF THIS PRODUCT OUTLINED IN SECTION 3. USE PROCESS EXPOSURES SUCH AS LOCAL EXHAUST VENTILATION, REDUCED HUMIDITY, REDUCE THE ACCESS TO THE PRODUCT.

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## SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### 1. Aluminum phosphide (CAS: 20859-73-8 EC: 244-088-0)

(Inhalation)

#### 8.3 Individual protection measures, such as personal protective equipment (PPE)

##### Body protection

Eyes: Wear safety goggles or safety glasses to prevent contact. Suggest using single use safety goggles or clean between use!

Body: Long sleeve shirts, long pants, socks, rubber boots and dry cotton gloves. Suggest using as much disposable chemical resistant suit and hat, rubber booties, dry cotton gloves.

Hands: Dry cotton gloves (disposable).

Other: After removal of application clothing brush off any dust left on your clothing. Wash your hands, do not eat, drink or smoke until you have removed all source of product.

# Safety Data Sheet

## PH3 Pellets and Tablets

### Respiratory protection

Respiratory: Wear an approved NIOSH/MSA full face mask respirator that provides protection from this product if phosphine is released. Suggest that you use disposable approved respiratory mask with hydrogen phosphide cartridge or properly clean before use and store in a sealed plastic bag.

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## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Appearance/form	Solid or dust, gray to light green
Odor	Garlic, decaying fish or odorless
Odor threshold	Since odor might not be detected under certain circumstances, the absence of a garlic odor does not mean that phosphine gas is absent.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability limits	Not available.
Upper/lower explosive limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Insoluble in water
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidizing properties	Not available.

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Exposure to moisture. Protect from water.

### 10.2 Chemical stability

Considered stable under normal ambient temperatures except hydrolysis. Aluminum phosphide reacts with moisture to product hydrogen phosphide gas. Ammonium carbonate produces ammonia and carbon dioxide.

### 10.3 Possibility of hazardous reactions

Formation of hydrogen phosphide gas, ammonia gas and carbon dioxide.

### 10.5 Incompatible materials

Product will react with strong oxidizing agents, acids or bases.

### 10.6 Hazardous decomposition products

Hazardous polymerization will not occur.

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## SECTION 11: Toxicological information

# Safety Data Sheet

## PH3 Pellets and Tablets

### Information on toxicological effects

#### Acute toxicity

Aluminum Phosphide

Acute Oral LD50 = 11.5mg/kg

Acute Dermal LD50 = >5,000 mg/kg (1 hour exposure)

Hydrogen Phosphide (phosphine gas)

Inhalation = LC50 190ppm (1 hour)

#### Skin corrosion/irritation

Not a sensitizer

#### Germ cell mutagenicity

Hydrogen Phosphide

Increased frequency of cells with structural chromosomal aberrations noted in an invitro cytogenetic assay with Chinese hamster ovary cells.

#### Carcinogenicity

Aluminum Phosphide

Not classified as a carcinogen by IARC, OSHA or NTP.

Hydrogen Phosphide

In a 2 year study rats were exposed to 48-90 g/m3 of feed and no overt systemic toxicity was noted.

Not classified as a carcinogen by IARC, OSHA or NTP.

#### Reproductive toxicity

Aluminum Phosphide

Not expected to produce reproductive or developmental effects.

Hydrogen Phosphide

Not expected to produce reproductive or developmental effects.

#### Summary of evaluation of the CMR properties

Aluminum Phosphide

Not classified as a carcinogen by IARC, OSHA or NTP.

Hydrogen Phosphide

Not classified as a carcinogen by IARC, OSHA or NTP.

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## SECTION 12: Ecological information

### Toxicity

No data.

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## SECTION 13: Disposal considerations

### Disposal of the product

Place spent tablets/pellets into a sealed container and check regulations for disposal.

### Disposal of contaminated packaging

Empty containers still have residue. Use the instructions in the applicators manual to facilitate proper disposal.

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## SECTION 14: Transport information

# Safety Data Sheet

## PH3 Pellets and Tablets

### DOT (US)

UN Number: 1397

Class: 4.3, 6.1

Packing Group: I

Proper Shipping Name: PH3 Pellets and PH3 Tablets

Reportable quantity (RQ): 100 lbs

Marine pollutant: Yes

Poison inhalation hazard: Yes

### IMDG

UN Number: 1397

Class: 4.3, 6.1

Packing Group: I

EMS Number: F-G, S-N

Proper Shipping Name: Aluminum Phosphide

### IATA

UN Number: 1397

Class: 4.3, 6.1

Packing Group: I

Proper Shipping Name: Aluminum Phosphide

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### SARA 313 Components

Aluminum Phosphide <60% Ammonium Carbonate <20%

#### SARA 311/312 Hazards

Acute Health Hazard, Fire Hazard and Reactive Hazard

#### Toxic Substances Control Act (TSCA) Inventory

Aluminum Phosphide

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## SECTION 16: Other information

### 16.1 Further information/disclaimer

The information is furnished without warranty, representation, inducement, or license of any kind, except that it is accurate to the best of Douglas Products and Packaging, Inc.'s knowledge. Because use conditions and applicable laws may differ from one location to another and may change with time, Recipient is responsible for determining whether the information is appropriate for recipient's use. Since Douglas Products and Packaging, Inc. has no control over how this information may be ultimately used, all liability is expressly disclaimed and Douglas Products and Packaging, Inc. assumes no liability.