

Printing date 09.08.2023 Version number 1 Revision: 09.08.2023

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- · 1.1 Product identifier
- Trade name: PHOSTOXIN PELLET
- · Authorisation No.: MAPP 19331
- · UFI: DHM7-0J6F-E10N-AT6Q
- 1.2 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.
- · Application of the substance / the mixture Plant protection product
- · 1.3 Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Detia Freyberg GmbH Dr.Werner-Freyberg-Str. 11 D-69514 LAUDENBACH GERMANY

· Further information obtainable from:

Detia Freyberg GmbH - Regulatory Affairs

telephone: +49-6201-708-0

e-mail: sicherheitsdatenblaetter@Detia-Freyberg.de

1.4 Emergency telephone number:

CHEMTREC: +1 703-741-5970 / 1-800-424-9300

CCN 993582

999

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- · Classification according to Regulation (EC) No 1272/2008



Water-react. 1 H260 In contact with water releases flammable gases which may ignite spontaneously.



skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



corrosion

Eye Dam. 1 H318 Causes serious eye damage.



Aquatic Acute 1 H400 Very toxic to aquatic life.

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Skin Irrit. 2 H315 Causes skin irritation.

· 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

· Hazard pictograms









GHS02 GHS05 GHS06 GHS09

· Signal word Danger

· Hazard-determining components of labelling:

aluminium phosphide ammonium carbamate

· Hazard statements

H260 In contact with water releases flammable gases which may ignite spontaneously.

H300+H330 Fatal if swallowed or if inhaled.

H311 Toxic in contact with skin.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

· Precautionary statements

P223 Do not allow contact with water.

P232 Protect from moisture.

P234 Keep only in original packaging. P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing

protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P321 Specific treatment (see application on this label).

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P335 Brush off loose particles from skin.

P370+P378 In case of fire: Use CO2, sand, extinguishing powder to extinguish.

P402+P404 Store in a dry place. Store in a closed container.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international

regulations.

· Additional information:

EUH029 Contact with water liberates toxic gas.

EUH032 Contact with acids liberates very toxic gas.

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

· **PBT:** Aluminum phosphide meets the T criterion, but not the P or B criterion.

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· vPvB:

This mixture does not contain any substances that are considered to be very persistent or very bioaccumulative (vPvB).

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· **Description:** Mixture of substances listed below with nonhazardous additions.

Dangerous components:		
	aluminium phosphide Water-react. 1, H260; Acute Tox. 2, H300; Acute Tox. 3, H311; Acute Tox. 1, H330; Aquatic Acute 1, H400 (M=100), EUH029, EUH032	56.0%
CAS: 1111-78-0 EINECS: 214-185-2	ammonium carbamate ♦ Eye Dam. 1, H318; ♦ Acute Tox. 4, H302	21.0%

[•] Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information:

Avoid any unnecessary contact with the product.

Call a doctor immediately in the event of an accident or if you feel unwell.

Tell the doctor the cause of hydrogen phosphide and, if possible, show the safety data sheet or label.

Do not leave affected persons unattended and take them to fresh air or out of the danger zone. Immediately knock out any clothing soiled by the product in a well-ventilated place and then remove it

Remove breathing equipment only after contaminated clothing have been completely removed. Allow contaminated clothing to ventilate well before washing and do not store in closed rooms without ventilation!

· After inhalation:

Immediate removal from the danger area!

A supply of fresh air or oxygen must be provided.

Seek immediate medical advice.

Provide artificial respiration if breathing is irregular or has stopped breathing.

· After skin contact:

Brush off loose particles from the skin. Wash skin with plenty of soap and water. If skin irritation or rash occurs: Get medical advice / attention.

· After eye contact:

Rinse eyes under running water for several minutes with the eyelid wide open. Remove any contact lenses that may be present and continue rinsing.

Consult a doctor for control and if eye irritation persists.

· After swallowing:

Do not induce vomiting; call for medical help immediately.

Bring vomit that has already been vomited by the affected person outside.

· 4.2 Most important symptoms and effects, both acute and delayed

Breathing difficulty

Headache

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Dizziness

Gastric or intestinal disorders

Nausea

· 4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment. Symptoms may be delayed after exposure (up to 48 hours later). Avoid acidosis and prevent pulmonary edema.

No antidote available.

Inhalative treatment on glucocorticoid basis to prevent pulmonary edema.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· Suitable extinguishing agents:

Use fire extinguishing methods suitable to surrounding conditions.

Carbon dioxide

Dry sand

Fire-extinguishing powder

Use a fire blanket for smaller fires.

For safety reasons unsuitable extinguishing agents:

Water

Foam

· 5.2 Special hazards arising from the substance or mixture

In contact with water, highly flammable and very toxic gases are released.

5.3 Advice for firefighters

Do not inhale explosion and fire gases. Co-ordinate fire-fighting measures to the surroundings. Fight fire with normal precautions from a reasonable distance.

· Protective equipment: Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Observe the information on exposure limitation and put on personal protective equipment (Section 8).

Ensure adequate ventilation.

Have measuring devices and first aid kit ready.

Keep unprotected persons not working in the area away from the danger area. The danger area is to be made clear by warning signs.

Keep away from ignition sources.

· 6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

· 6.3 Methods and material for containment and cleaning up:

Pick up mechanically.

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Use of the product only by knowledgeable and trained persons.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Avoid any contact of the product with water!

Do not breathe the product dust.

Advice on general hygiene in the workplace:

Take off contaminated clothing immediately. Wash hands after use. Do not eat, drink or smoke in work areas. Remove contaminated clothing and protective equipment before entering any eating area. Do not store food and drinks with chemicals. Do not use containers for chemicals that are normally intended for holding food. Keep away from food, drink and animal feed. Do not breathe gas / vapor / aerosol. Avoid contact with eyes and skin.

· Information about fire - and explosion protection:

Avoid dust formation.

If the product is handled openly, devices with local exhaust ventilation must be used.

Protect against electrostatic charges.

Keep away from sources of ignition. Do not smoke!

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

Keep container tightly closed and store in a cool, well-ventilated place.

Keep inaccessible to non-operational and non-specialist persons.

Information about storage in one common storage facility:

Do not store together with acids, water, oxidizing substances and self-igniting substances. Do not store food and drinks with chemicals. Do not use containers for chemicals that are normally intended for holding food. Keep away from food, drink and animal feed.

- · Further information about storage conditions: None.
- · 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

CAS: 20859-73-8 aluminium phosphide (>50-≤75%)

WEL Long-term value: 2 mg/m³

· Regulatory information

Additional Occupational Exposure Limit Values for possible hazards during processing:

CAS: 7803-51-2 phosphine

WEL Short-term value: 0.28 mg/m³, 0.2 ppm Long-term value: 0.14 mg/m³, 0.1 ppm

· Additional information:

The lists valid during the making were used as basis.

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Electronic measuring devices are recommended for monitoring the concentration of hydrogen phosphide in the workplace.

· 8.2 Exposure controls

· Individual protection measures, such as personal protective equipment

· General protective and hygienic measures:

Technical and organizational protective measures are to be used with preference (personal protective equipment must not be a permanent measure).

Wash hands before breaks and at the end of work.

Immediately knock out any clothing soiled by the product in a well-ventilated place and then remove it. Only remove respiratory protection after removing contaminated clothing.

Store protective equipment separately, check it regularly, clean it and replace it if necessary. Before washing, let contaminated clothing ventilate well and do not store in closed rooms without ventilation!

Keep away from foodstuffs, beverages and feed.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

· Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

For the use of a respiratory filter device: filter color gray (type B, inorganic gases and vapors), in dusty environments a combination filter is recommended (filter color white, filter type P).

· Hand protection



Protective gloves according to EN ISO 374-1 at least type B

The selection of a suitable glove does not only depend on the material, but also on other quality features and varies from manufacturer to manufacturer. Please contact your occupational safety advisor together with this safety data sheet.

Eye/face protection



In the event of contact with the product: Wear tightly fitting protective goggles / full protective mask.

Body protection:

For preparatory and follow-up work: long-sleeved work clothes and safety shoes If the gas concentration is unknown or increased: Suitable chemical protective suit

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
- · General Information

Physical stateColour:Odour:SolidGreyGarlic-like

· **Odour threshold:** Not applicable as substance is toxic to inhalation.

· Melting point/freezing point: Undetermined.

Boiling point or initial boiling point and

boiling range Undetermined.

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· Flammability Contact with water liberates extremely flammable

gases.

· Lower and upper explosion limit

Lower: Not determined.
 Upper: Not determined.
 Flash point: Not applicable.
 Decomposition temperature: Not determined.
 pH Not applicable.

· Viscosity:

Kinematic viscosityDynamic:Not applicable.Not applicable.

Solubility

· water: Not applicable (reaction with water leads to

decomposition).

· Partition coefficient n-octanol/water (log

value) Not ap

Not applicable (reaction with water leads to

decomposition).

· Vapour pressure: Not applicable.

· Density and/or relative density

Density: 1,791-1,857 g/cm³
 Relative density 1,87864-2,01470
 Vapour density Not applicable.

· 9.2 Other information

· Appearance:

· Form: Solid

Important information on protection of health

and environment, and on safety.

· **Ignition temperature:** Product is not selfigniting.

• Explosive properties: Product does not present an explosion hazard.

Solvent content:

· Solids content: 100.0 %

· Change in condition

· Evaporation rate Not applicable.

· Information with regard to physical hazard classes

· Explosives Void Flammable gases Void · Aerosols Void · Oxidising gases Void · Gases under pressure Void · Flammable liquids Void · Flammable solids Void · Self-reactive substances and mixtures Void · Pyrophoric liquids Void · Pyrophoric solids Void Self-heating substances and mixtures Void

· Substances and mixtures, which emit

flammable gases in contact with water In contact with water releases flammable gases

which may ignite spontaneously.

Oxidising liquids
 Oxidising solids
 Organic peroxides
 Corrosive to metals

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· Desensitised explosives

Void

SECTION 10: Stability and reactivity

- · 10.1 Reactivity Reactive with water and acids.
- · 10.2 Chemical stability
- · Thermal decomposition / conditions to be avoided: Release of ammonia and carbon dioxide
- · 10.3 Possibility of hazardous reactions

Contact with water releases flammable gases.

Contact with water releases toxic gases.

· 10.4 Conditions to avoid

Protect from moisture.

Avoid high temperatures.

Protect from contact with acids.

· 10.5 Incompatible materials:

Protect from moisture.

Protect from contact with acids.

· 10.6 Hazardous decomposition products:

Ammonia

Hydrogen phosphide

Contact with water releases flammable gases.

Contact with water releases toxic gases.

SECTION 11: Toxicological information

- · 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
- · Acute toxicity

Fatal if swallowed or if inhaled.

Toxic in contact with skin.

· LD/LC50 v	alues:
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ATE (Acute Toxicity Estimates)

Oral	LD50	>15.5 mg/kg (Rat (Rattus spec.))
Dermal	LD50	821–1,607 mg/kg (Rat (Rattus spec.))
Inhalative	LC50/4 h	0.0857 mg/l (Rat (Rattus spec.))

CAS: 20859-73-8 aluminium phosphide

Oral	LD50	8.7 mg/kg (Rat (Rattus spec.))
Dermal	LD50	460-900 mg/kg (Rat (Rattus spec.))
Inhalative	LC50/4 h	0.048 mg/l (Rat (Rattus spec.)) (phosphine generated from aluminium phosphide)
	LC50/4 h	0.015 mg/l (Rat (Rattus spec.)) 11 ppm phosphine (equivalent to 0.015 mg phosphine/L air or 2.8 mg/kg bw))

CAS: 1111-78-0 ammonium carbamate

Oral	LD50	>681 mg/kg (Rat (Rattus spec.))
Dermal	LD50	>2,000 mg/kg (Rat (Rattus spec.))
Inhalative	LC50/4 h	6.6 mg/l (Rat (Rattus spec.))

· Skin corrosion/irritation Causes skin irritation.

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· Serious eye damage/irritation Causes serious eye damage.

· 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

CAS: 20859-73-8 aluminium phosphide

ErC50/ 48h | 1.44 mg/l (Algae)

LC50/ 96h | 0.00798 mg/l (Rainbow trout (Oncorhynchus mykiss))

EC50/ 24h | 0.00018 mg/l (Daphnia magna)

- 12.2 Persistence and degradability Decomposes in contact with water.
- 12.3 Bioaccumulative potential No further relevant information available.
- · Bioconcentration factor (BCF)

Phosphine (calculated on the basis of log POW = 0.9):

BCF fish = 1.16 L/kq

BCF earthworm = 0.94 L / kg

- 12.4 Mobility in soil No further relevant information available.
- · 12.5 Results of PBT and vPvB assessment
- · **PBT:** Aluminum phosphide meets the T criterion, but not the P or B criterion.
- · vPvB:

This mixture does not contain any substances that are considered to be very persistent or very bioaccumulative (vPvB).

· 12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

- · 12.7 Other adverse effects
- · Remark: Very toxic for fish
- Additional ecological information:
- · General notes:

Very toxic for aquatic organisms

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Danger to drinking water if even small quantities leak into the ground.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Waste from fumigant residues must be disposed of in accordance with the legal waste regulations / provisions.

The product, not outgassed product residues and uncleaned packaging are to be disposed of as hazardous waste subject to verification.

Proper disposal according to Directive 2008/98/EC on waste and hazardous waste.

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- · Uncleaned packaging:
- Recommendation:

Give residue-emptied containers for local recycling, recovery or waste disposal. cleaned empty packaging:

Disposal is to be carried out in consultation with the regional disposal company in accordance with the official regulations pursuant to the AVV Ordinance.

14.1 UN number or ID number	
ADR, IMDG, IATA	UN1397
14.2 UN proper shipping name ADR IMDG IATA	UN1397 ALUMINIUM PHOSPHIDE, ENVIRONMENTALLY HAZARDOUS ALUMINIUM PHOSPHIDE, MARINE POLLUTAN ALUMINIUM PHOSPHIDE
14.3 Transport hazard class(es)	
ADR	
Class	4.3 Substances which, in contact with water, emi flammable gases.
Label	4.3+6.1
Class	4.3 Substances which, in contact with water, emi flammable gases.
Label	4.3/6.1
IATA	
Class	4.3 Substances which, in contact with water, emi flammable gases.
Label	4.3 (6.1)
14.4 Packing group ADR, IMDG, IATA	I
14.5 Environmental hazards: Marine pollutant:	Yes Symbol (fish and tree)
Special marking (ADR):	Symbol (fish and tree)



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• 14.6 Special precautions for user Warning: Substances which, in contact with water,

emit flammable gases.

· Hazard identification number (Kemler code): -

• EMS Number: F-G,S-N

• **Stowage Code** SW2 Clear of living quarters.

SW5 If under deck, stow in a mechanically

ventilated space.

· Handling Code H1 Keep as dry as reasonably practicable

• Segregation Code SG26 In addition: from goods of classes 2.1 and 3

when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro-ships a distance of 6 m athwartship shall be

maintained.

SG35 Stow "separated from" SGG1-acids

 \cdot 14.7 Maritime transport in bulk according to

IMO instruments Not applicable.

· Transport/Additional information:

· ADR

· Limited quantities (LQ) 0

· Excepted quantities (EQ) Code: E0

Not permitted as Excepted Quantity

· Transport category 1 · Tunnel restriction code E

· IMDG

· Limited quantities (LQ)

· Excepted quantities (EQ) Code: E0

Not permitted as Excepted Quantity

· UN "Model Regulation": UN 1397 ALUMINIUM PHOSPHIDE, 4.3 (6.1), I,

ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (UK REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I None of the ingredients is listed.
- · Seveso category
- H2 ACUTE TOXIC
- O3 Substances or mixtures with hazard statement EUH029
- E1 Hazardous to the Aquatic Environment

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- · Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
- · National regulations:
- · Information about limitation of use:

Employment restrictions concerning juveniles must be observed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H260 In contact with water releases flammable gases which may ignite spontaneously.

H300 Fatal if swallowed.

H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

Very toxic to aquatic life. H400

EUH029 Contact with water liberates toxic gas.

EUH032 Contact with acids liberates very toxic gas.

- · Department issuing SDS: Regulatory Affairs
- · Contact: sicherheitsdatenblaetter@detia-freyberg.de
- Abbreviations and acronyms:

UFI: Unique Formular Identifier

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Water-react. 1: Substances and mixtures which in contact with water emit flammable gases - Category 1

Acute Tox. 2: Acute toxicity - Category 2

Acute Tox. 4: Acute toxicity - Category 4

Acute Tox. 3: Acute toxicity – Category 3 Acute Tox. 1: Acute toxicity – Category 1

Skin Irrit. 2: Skin corrosion/irritation - Category 2

Eye Dam. 1: Serious eye damage/eye irritation - Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard - Category 1

* Data compared to the previous version altered.