

Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY

Product Name: QUICKPHOS TABLETS

Use: Stored Grain Fumigation

Company Name:

Coopers Environmental Science (Pty) Ltd.

Reg. No. 2000/023667/07

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Emergency Contact Numbers:

Griffon Poison Information Centre: (+27) 82 446 8946

2. HAZARD IDENTIFICATION

Important hazards:

GHS classification of the mixture	
Hazard classes / categories	Hazard codes
Water reactivity 1	H260
Acute Toxicity 2	H300
Acute Toxicity 3	H311
Eye Damage 1	H318
Acute Toxicity 1	H330
Aquatic Acute 1	H400

GHS classification: Category 1

Hazard pictogram:



Signal Word: Danger

Hazard Statements:

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

H300: Fatal if swallowed.

H311: Toxic in contact with skin.

H318: Causes serious eye damage.

H330: Fatal if inhaled.

H400: Very toxic to aquatic life.

Precautionary Statements:

P102: Keep out of reach of children.

P103: Read label before use.

P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire.

P232: Protect from moisture.

P260: Do not breathe gas.

P264: Wash hands, face and all exposed skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P273: Avoid release to the environment.

P280: Wear protective clothing, gloves, eye/face protection and suitable respirator.

P301+P310: IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.

P302+P335+P334: IF ON SKIN: Brush off loose particles from skin and immerse in cool water.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position. Comfortable for breathing.

P310: Immediately call a POISON CENTRE or doctor/physician.

P391: Collect spillage.

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

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

P501: Dispose of contents/container in accordance with local, regional, national and international regulations.

Poison Schedule: S7. Dangerous Poison

3. COMPOSITION INFORMATION ON INGREDIENTS:

CAS NO	HAZARDOUS COMPONENT	CONCENTRATION	GHS CLASSIFICATION
20859-73-8	Aluminium phosphide	56 %	H260: Water reactive 1 H300: Acute Toxicity 2 H311: Acute Toxicity 3 H330: Acute Toxicity 1 H400: Aquatic Acute 1
1111-78-0	Ammonium carbamate	> 25 %	H302: Acute Toxicity 4 H318: Eye Damage 1

4. FIRST AID MEASURES:

Inhalation: In case of headache, dizziness, feeling of constriction, difficult breathing and nausea immediately leave the danger zone and seek fresh air. Administer manual cardio-pulmonary resuscitation if necessary (not mouth to mouth). The patient must be taken to hospital. Give physician this container. Inhalation products for acute treatment following exposition of smoke gas (e.g. a beclomethasone (Ventolair®) spray, a dexamethasone (Auxiloson®) spray).

Skin contact: IF ON SKIN: Brush off loose particles from skin and immerse in cool water. Special aids required for First Aid measures: Have methyl prednisolone (application by physician) and products for acute treatment following exposition of smoke gas (e.g. a beclomethasone (Ventolair®) spray, a dexamethasone (Auxiloson®) spray) available.

Eye contact: Remove rests of preparation with fluff-free cloth; rinse with plenty of water and apply eye drops only after no more powdery residues are visible.

Ingestion: IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Induce vomiting and repeat until vomit ceases to smell of carbide.

There is no specific antidote.

Give gastric lavage with 1: 5000 potassium permanganate solution. In case of pulmonary oedema give hypertonic glucose solution intravenously. Symptomatic treatment.

NOTE TO PHYSICIAN:

Treat symptomatically. In case of swallowing, perform gastric lavage.

Should hypotension develop, consider cardiac tonic Dopamine 5 to 10 g/kg/min.

Complications are:

Incipient pulmonary oedema (Consider glucocorticoids e.g. 500 to 1000 µmg Prednisolone on first day)

Progressive lung oedema: give oxygen and by intubation continuous fluid removal. Counter enzyme-blockage oxygen deficiency by exchange blood transfusion.

Renal failure: consider hemodialysis

Watch for hepatic failure, electrocardiac and electrolyte disturbances.

20 ml of 20% Calcium Gluconate plus 1 to 2 g of 10% Sodium thiosulphate I.V. in an adult may also be considered in severe cases.

5. FIRE FIGHTING MEASURES:

Fire and explosion hazard:

Flash point: > 62 °C
The product itself does not burn.

Extinguishing agents: Extinguish fires in the vicinity with dry sand or powder and then with CO₂.

Firefighting:

Suitable extinguishing media:

Carbon dioxide, sand, lime, soda ash or dry powder. DO NOT use water.

Specific hazards:

Special protective equipment:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Fires containing phosphine may produce phosphoric acid and phosphorous oxide.

Personal protective equipment:

Fire may produce irritating or poisonous vapours, mists or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES:

Personal precautions:

Use personal protective clothing and a self-contained breathing apparatus (SCBA). Avoid contact with the skin, eyes and clothing. Remove contaminated clothes, undergarments and shoes immediately.

Environmental precautions:

Do not discharge into the subsoil/soil.
Do not discharge into drains/surface waters/groundwater.
Notify authorities if the product enters sewers and public waters.

Methods for cleaning up or taking up:

Prevent dispersion and clean up the remainder carefully. Do not use water for cleaning, the area should be kept secure and aerated until checked for zero gas concentration using appropriate gas sampling equipment. Remove as hazardous waste, according to national and local regulations.

7. HANDLING AND STORAGE:

Handling:

Operator should not be alone during handling and application of product. Remove sources of naked flame or sparks. Fatal if inhaled, toxic in contact with skin and fatal if swallowed. Causes serious eye damage. Avoid contact with eyes and skin and inhalation of fumes. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high-water mark.

Storage:

Store in its original container in isolated, dry, cool (avoid temperatures above 32 °C) and well-ventilated area. Keep under lock and key out of reach of unauthorised persons, children and animals. Store away from incompatible substances. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION:

Long term workplace exposure limit for phosphine is 0.14mg/m³ (8-hour time weighted average) and 0.28mg/m³ short term exposure (15 minutes reference period).

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations.

Personal protective equipment

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

Respiratory protection:

Suitable respiratory protection such as a full-face mask respirator with appropriate gas filters.

Hand protection:

Suitable chemical resistant safety gloves also with prolonged, direct contact
E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	Grey tablets
Colour:	Greyish yellowish
Odour:	Garlic or carbide-like
pH-value (20 °C):	N/A

Flash point in °C:	Highly flammable
Inflammability:	In contact with water / humidity, acids an extremely flammable gas is developed
Self ignition:	Contains additives to prevent self-ignition; but in contact with water releases flammable gases which may ignite spontaneously.
Lower explosion limit:	Hydrogen phosphide 1.8 (1.79-1.89)
Upper explosion limit:	N.V.
Vapour pressure:	Hydrogen phosphide 34.6 bar
Relative density:	N/A
Density:	2.3g/m ³
Specific gravity:	2.85 (25°C)
Melting point:	>1000 °C

10. STABILITY AND REACTIVITY:

Stable at normal temperature and pressure. Reacts violently with water to generate toxic and flammable gas.

Conditions to avoid

Avoid extremes of temperatures. Do not use in wet weather as contact with water will liberate phosphine gas.

Materials to avoid

Avoid contact with water and dilute strong acids. Phosphine is considered to be corrosive to copper, copper alloys, silver and gold.

11. TOXICOLOGICAL INFORMATION:

LD50 oral (rat male/female):	8.7 mg/kg
LC50 by inhalation (rat male/female):	0.015 mg/l / 4 h
LD50 dermal (rat male/female):	500 - 1000 mg/kg
Skin irritant:	Not classified as a skin irritant.
Sensitization/guinea pig:	Contains no known skin sensitizers.
Eye irritant:	Contact with water liberates very toxic highly flammable gas which is irritating to the eyes. If the product comes into contact with the eyes it could cause serious eye damage.

12. ECOLOGICAL INFORMATION:

ECOTOXICOLOGY:

Fish:

LC50 (96 hours): 9.7 x 10⁻³ ppm₆

Daphnia:

LC50 (48 hours): 0.2 mg/l

Ecotoxicity: phosphine decomposes in the atmosphere within 5 - 28 hours

13. DISPOSAL CONSIDERATIONS:

Disposal of waste product:

This product is dangerous for the environment. Do not discharge to sewers or drains. This product must be disposed of according to local regulations.

Disposal of waste containers:

Handle and store empty containers as if they still contain the product. Flasks must never be rinsed or cleaned but collected in a secure place, and left in the open air for several days. Large numbers of empty containers should be moved to a deep open pit until any phosphine evolution is complete. The containers should then be disposed in accordance with local regulations.

14. TRANSPORT INFORMATION:

Road Transport ADR/IRD, Maritime Transport IMDG/IMO:

UN NUMBER:	1397
Class:	4.3, 6.1
Packing group:	I
Proper shipping name:	ALUMINIUM PHOSPHIDE

15. REGULATORY INFORMATION:

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

Chemical Safety Assessment

Advice on product handling can be found in sections 7 and 8 of this safety data sheet.

16. OTHER INFORMATION:

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.