

MATERIAL SAFETY DATA SHEET

Quickphos Fumigation Tablets and Pellets

Date of Issue: October 23, 2002

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

Product name: Quickphos Fumigation Tablets and Pellets
Other names: Phostoxin
Product code: 66404
Recommended use: Fumigant for grain protection and pest control use.
Supplier: Bayer Environmental Science – A Business Group of Bayer
CropScience Pty Ltd ABN 87 000 226 022
Address: 391 - 393 Tooronga Road, East Hawthorn
Victoria 3123, Australia
Telephone: (03) 9248 6888
Facsimile: (03) 9248 6800
Website: www.bayercropscience.com.au
Contact: Technical Manager (03) 9248 6888
Emergency Telephone Number: 1800 033 111 – Orica SH&E Shared Services

2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE - DANGEROUS GOOD

Will irritate eyes and skin. Flammable

Hazard designation: Hazardous according to criteria of Worksafe Australia
Risk phrases: R15 Contact with water liberates highly flammable gases
R29 Contact with water liberates toxic gas
R28 Very toxic if swallowed
R32 Contact with acids liberates toxic gases
Safety phrases: Not applicable
ADG classification: Class 6.1
SUSDP classification: Schedule 7 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Concentration (g/kg):
Aluminium phosphide	[20859-73-8]	570
Ammonium carbamate	[1111-78-0]	<300 g/kg
Inert ingredients	-	<65 g/kg

MATERIAL SAFETY DATA SHEET

Quickphos Fumigation Tablets and Pellets

Date of Issue: October 23, 2002

4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Material Safety Data Sheet to a doctor.

- Inhalation:** Affected persons should be immediately removed from the contaminated area into the open air and given oxygen treatment. Apply artificial respiration using a respirator if the patient is not breathing. DO not apply mouth to mouth resuscitation.
- Skin contact:** If powder or granules of Quickphos get on skin or clothing brush or shake material off clothes in a well ventilated area. Allow clothes to aerate in a well ventilated area prior to laundering. Do not leave contaminated clothing in occupied and/or confined areas. Wash contaminated skin thoroughly with soap and water.
- Eye contact:** If dust from product gets into the eyes flush with plenty of water. Get medical attention.
- Ingestion:** Do not use mouth-to-mouth resuscitation. Place patient in a flat position and allow to rest. Do NOT administer any milk, butter, oils (e.g. castor oil) or alcohol.
- First Aid Facilities:** Provide washing facilities in the workplace.
- Symptoms:** Symptoms of phosphine poisoning include nausea, fatigue, a feeling of oppression in the chest, headaches, and stomach pains.
- Medical attention:** If a patient has swallowed aluminium phosphide (Quickphos) he/she may be emitting toxic phosphine gas. First aid and medical staff should take precautions against exposure to phosphine emitted by such a patient. Do not administer mouth-to-mouth resuscitation - use other forms of resuscitation.

5. FIRE FIGHTING MEASURES

- Extinguishing media:** Suffocate flames with sand, carbon dioxide or dry extinguishing powder. Do NOT use water on metal phosphide fires.
- Hazards from combustion products:** Fires involving phosphine or metal phosphides will produce phosphoric acid
 $2\text{PH}_3 + 4\text{O}_2 \rightarrow 3\text{H}_2\text{O} + \text{P}_2\text{O}_5 \rightarrow 2\text{H}_3\text{PO}_4$
- Precautions for fire fighters:** Wear full protective clothing and self-contained breathing apparatus. Contain firefighting water.

MATERIAL SAFETY DATA SHEET

Quickphos Fumigation Tablets and Pellets

Date of Issue: October 23, 2002

6. ACCIDENTAL RELEASE MEASURES

If possible, dispose of spilled Quickphos by use according to the label. Freshly spilled material which has not been contaminated with water or foreign matter may be replaced into original containers. Punctured containers may be temporarily repaired using aluminium tape. If the age of the spill is unknown, or the material has been contaminated with soil, debris, water etc., gather up the spillage into small open buckets having a capacity no larger than 4.5 litres. Do not add more than about 1 to 1.5 kg 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 Quickphos. Respiratory protection may be required during clean-up of spilled material. If the concentration of hydrogen phosphide is unknown, approved self-contained breathing apparatus must be worn. Small amounts of spillage, from about 4 - 8 kg may be spread out over the ground in an open area to be deactivated by atmospheric moisture. Alternatively the material may be wet deactivated as described in disposal information.

7. HANDLING AND STORAGE

Handling: Keep out of reach of children.

Storage: Store away from food, drink or animal feeding stuffs.
 Store below 30 degrees C. Keep away from heat or moisture.
 Do not store in buildings inhabited by humans or domestic animals.
 Do not allow water or other liquids to contact product.
 Do not pile up large quantities of Quickphos during fumigation or disposal.
 Once exposed, do not confine Quickphos or otherwise allow hydrogen phosphide concentrations to exceed the LEL.
 Open containers only in the open air. Do not open in a flammable atmosphere. Phosphine in the head space of containers may flash upon exposure to atmospheric oxygen.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards:	Inhalation Exposure Limits					
	COMPONENT	OSHA (ppm)	PEL	ACGIH TWA (ppm)	TLV STEL (ppm)	IDHL (ppm)
	Hydrogen phosphide	0.3		0.3	1.0	200
	Ammonia	50		25	35	500
	Carbon dioxide	5000		5000	30,000	50,000

Engineering controls: No engineering controls are required for the normal use of this product according to label. However, follow the label directions with regard to ventilation of treated structures.

MATERIAL SAFETY DATA SHEET

Quickphos Fumigation Tablets and Pellets

Date of Issue: October 23, 2002

Personal Protective Equipment:

Personal protective measures:

Avoid personal exposure to these products.

Testing for residual phosphine gas is recommended prior to entry to fumigated premises. Very dangerous. Product can kill if swallowed. Product releases dangerous phosphine gas slowly in moist air and immediately if wet. Can kill if inhaled. Do not inhale vapour. Avoid contact with eyes and skin. Do not inhale dust. Open container in the open air.

Keep away from water and liquids. Use entire contents in one operation; if not possible, seal thoroughly with waterproof adhesive tape or air-tight closure.

Personal protective equipment:

Respiratory Protection - NIOSH/MSHA approved full-face mask with approved canister for phosphine may be worn at concentrations up to 15 ppm. At levels above this, or when phosphine concentration is unknown, NIOSH/MSHA approved self-contained breathing apparatus or equivalent must be worn.

Protective Clothing - Wear gloves when handling the product.

Eye Protection - None required.

Ventilation - Local ventilation is generally adequate to reduce hydrogen phosphide levels in fumigated premises to below the TLV/TWA. Exhaust fans may be used to speed the aeration of silos, warehouses, shipholds, containers, etc.

When opening the container and using the product wear elbow-length PVC gloves. If dispensing by hand wear full facepiece respirator with combined dust and gas cartridge or supplied air respirator.

Industrial hygiene:

Avoid contact with eyes or skin.

Clean working clothes and protective equipment with soap and water.

When space fumigating in enclosed areas (eg rooms, warehouses) wear protective clothing specified in 3.2 above.

Wash hands after use.

MATERIAL SAFETY DATA SHEET

Quickphos Fumigation Tablets and Pellets

Date of Issue: October 23, 2002

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Greenish-grey pellet or tablet
Odour:	Similar to garlic, carbide, or decaying fish.
Vapour pressure:	Aluminium phosphide 0 mm Hg Phosphine gas 40 mm Hg @ -129.4 degrees C
Vapour density:	Not available
Boiling point:	Aluminium phosphide >1000°C Phosphine gas -87.7°C
Freezing/melting point:	Aluminium phosphide >1000° C Phosphine gas -133.5°C
Solubility:	Aluminium phosphide - insoluble, reacts Phosphine - 26 cc in 100 mL at 17°C
Density:	Specific gravity of phosphine: 1.17 (relative to air = 1)
pH:	Not relevant
Flash Point:	Not flammable
Flammability (explosive) limits:	The product in itself is not explosive, however see above regarding phosphine gas. Phosphine LEL 1.8% w/v, UEL not known.
Auto-ignition temperature:	Not available
Octanol/water partition coefficient:	Not available
Formulation:	Pellet or tablet fumigant for pest control

10. STABILITY AND REACTIVITY

Chemical stability:	Quickphos is stable to most chemical reactions, except for hydrolysis.
Hazardous polymerisation:	Hazardous polymerisation will not occur.
Conditions to avoid:	Moist air
Incompatible materials:	Avoid contact with water and oxidising agents.
Hazardous decomposition products:	It will react with moist air, liquid water, acids and some other liquids to produce toxic and flammable hydrogen phosphide gas.

MATERIAL SAFETY DATA SHEET

Quickphos Fumigation Tablets and Pellets

Date of Issue: October 23, 2002

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation:	Exposure to low levels causes malaise, ringing in the ears, fatigue, nausea, and pressure in the chest which is relieved by removal to fresh air. Exposure to high concentrations can be fatal.
Skin contact:	May irritate skin
Eye contact:	Dust may irritate the eyes.
Ingestion:	Toxic if swallowed
Other:	None

ANIMAL TOXICITY DATA – PRODUCT: No data available for the product.

ANIMAL TOXICITY DATA – INDIVIDUAL INGREDIENTS:

Acute:

Oral toxicity:	LD ₅₀ rat: 11.5 mg/kg
Dermal toxicity:	Not available
Inhalation toxicity:	LC ₅₀ (1 h): 190 ppm Hydrogen phosphide (phosphine) gas
Skin irritation:	Aluminium phosphide and phosphine gas from Quickphos are not absorbed dermally
Eye irritation:	Not available
Sensitisation:	Not available

Chronic:

Quickphos is not known to cause chronic poisoning. It is not carcinogenic and is not listed as such by NTP, IARC, or OSAH.

MATERIAL SAFETY DATA SHEET

Quickphos Fumigation Tablets and Pellets

Date of Issue: October 23, 2002

12. ECOLOGICAL INFORMATION

No ecological toxicity data are available.

Fish toxicity:	Not available
Daphnia toxicity:	Not available
Toxicity to algae:	Not available
Bird toxicity:	Not available
Bee toxicity:	Not available
Other:	Not available
Environmental fate, persistence and degradation:	Not available

13. DISPOSAL CONSIDERATIONS

Wet deactivation: Deactivating solution is prepared by adding low sudsing detergent to water in a drum or other suitable container. A 2% solution or 4 cups of detergent to 130 litres is suggested. The container should be filled with deactivating solution to within a few centimetres of the top.

The Quickphos is added slowly to the deactivating solution and stirred so as to thoroughly wet all the Quickphos. This should be carried out in the open air and respiratory protection may be required. No more than 20-25 kg of Quickphos should be added to 70 litres of solution

Allow the mixture to stand, with occasional stirring, for about 36 hours. The resultant slurry will then be safe for disposal. Dispose of the slurry or deactivated material, with or without preliminary decanting, at a landfill or other suitable site approved by local authorities.

14. TRANSPORT INFORMATION

UN number:	3048
Proper shipping name:	ALUMINIUM PHOSPHIDE PESTICIDE
Class and Subsidiary Risk:	6.1
Packing Group:	1
EPG:	Not applicable
Hazchem code:	4WE

MATERIAL SAFETY DATA SHEET

Quickphos Fumigation Tablets and Pellets

Date of Issue: October 23, 2002

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988

National Registration Authority Approval Number: 46948

16. OTHER INFORMATION

Trademark information:

Preparation information: Replaces June 25, 1999 edition.
Reason for update: Conversion to 16 heading format.

Data sources: Bayer CropScience Pty Ltd product safety data and published data

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

END OF MSDS