

Product Name: FUMAPHOS FUMIGATION BLANKET  
APVMA Approval No: 52019/113451



Label Name:	FUMAPHOS FUMIGATION BLANKET
-------------	-----------------------------

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
------------------	---

Constituent Statements:	ACTIVE CONSTITUENT: 330 g/kg PHOSPHINE (PH <sub>3</sub> ) present as ALUMINIUM PHOSPHIDE Each 1.7 kg Blanket liberates 561 g PHOSPHINE (PH <sub>3</sub> )
-------------------------	--

Mode of Action:	GROUP 24A INSECTICIDE
-----------------	-----------------------

Statement of Claims:	For control of insect pests of stored products in certain situations as per the Directions for Use Table
----------------------	--

Net Contents:	NET CONTENTS: 3.4 kg (2 x 1.7 kg blankets)
---------------	--

Restraints:	RESTRAINTS: DO NOT fumigate in inhabited buildings. DO NOT fumigate in work situations where there is a risk that phosphine gas could leak from fumigation enclosures into working areas. DO NOT use on commodities, or in empty containers, railcars or vessels that are in transit or likely to be in transit during the Exposure and/or Ventilation Periods. DO NOT use in road transport vehicles (including a truck or road hauled container). DO NOT heap blankets. Heaped blankets limit gas release. DO NOT add water to the product. DO NOT use when the commodity temperature is less than 15°C or the relative humidity within the structure is less than 25% or, with raw cereal grains, when the moisture content is less than 9%. DO NOT apply in structures that are not well sealed*. DO NOT apply as a surface-only treatment in a structure whose height exceeds twice its
-------------	---

width, unless the structure/enclosure has a gas recirculation device fitted.  
DO NOT use this product if the headspace of a structure whose height exceeds twice the width is less than 10 % of the internal volume and its temperature will exceed 45 C

Directions for Use:

Other Limitations:

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.

Withholding Periods:

WITHHOLDING PERIOD:  
DO NOT USE TREATED PRODUCE FOR HUMAN CONSUMPTION OR FOR STOCK FOOD FOR 2 DAYS AFTER COMPLETION OF FUMIGATION (MINIMUM EXPOSURE PERIOD PLUS VENTILATION PERIOD).  
TOBACCO: NOT REQUIRED WHEN USED AS DIRECTED.  
TREATED COMMODITIES MAY BE SHIPPED AFTER COMPLETION OF THE MINIMUM EXPOSURE PERIOD PLUS VENTILATION PERIOD.

Trade Advice:

General Instructions:

GENERAL INSTRUCTIONS:  
Fumaphos releases phosphine gas when exposed to air. Phosphine penetrates throughout the commodity to kill eggs, larvae, pupae and adult stages of storage pests in sealed enclosures, but some eggs, pupae and adults will survive in unsealed enclosures (see Note 1 above). Protect by sealing or otherwise, sensitive electrical and electronic equipment (computers, meters, switches, fire alarm systems, etc.) containing copper/copper alloy components, photographic film or copy paper. Phosphine corrodes copper based materials.  
Application (as appropriate to product type)

- Calculate the use rate according to Directions for Use Table. (eg. One 3.4kg Fumaphos container contains two blankets which together liberate 1122 g phosphine which will fumigate 750 m<sup>3</sup> (= 1122 / 1.5) of bulk commodities in a well-sealed\* storage or 1870m<sup>3</sup> (=1122/0.6) of bulk commodities in well-sealed\* plastic-covered bunkers of 1000 tonnes or greater.)
- Open product container in the open air, remove blanket and roll out on top of grain or commodity, or lay on floor in space to be fumigated.
- DO NOT reseal container. Use entire contents in one operation. DO NOT separate bags.
- Vacate all personnel as quickly as possible and seal off the treatment area.
- When fumigation blankets are used in large temporary bunker type storages of several thousand tonnes the correct number of blankets should be placed at even intervals to promote uniform disbursement of gas within the bunker. Make a longitudinal slit of 35cm and probe the blanket (bag chain) using a rod or extensible shaft to its full extension below the tarpaulin. When completed attach near the end for retrieval purposes and reseal the slit. Avoid walking over the positioned blanket.

Resistance Warning:

INSECTICIDE RESISTANCE WARNING:  
For insecticide resistance management Fumaphos is a group 24A insecticide. Some naturally occurring insect biotypes resistant to Fumaphos and other Group 24A insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually

dominate the insect population if Fumaphos or other Group 24A insecticides are used repeatedly. The effectiveness of Fumaphos on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, National Fumigants Pty Ltd accepts no liability for any losses that may result from the failure of Fumaphos to control resistant insects.

Application of Fumaphos in unsealed storages/ enclosures and use of low dose rates and shortened exposure periods is contrary to label instruction and will contribute to development of resistance.

<p>Precautions:</p>	<p><b>FLAMMABLE:</b> Keep away from naked flame.</p> <p><b>PRECAUTIONS:</b> Show the following warning sign prominently at all approaches to every fumigation site. "DANGER – POISON GAS — KEEP AWAY"</p> <p>Keep animals, children and unauthorised persons away from the area under treatment until the area is shown to be free from phosphine as indicated by a gas measuring device.</p> <p><b>WARNING:</b> Containers must be opened in the open air. Whilst opening containers take care and point containers away from the face and body, as under certain conditions possible build-up of gas may result in flash flame upon exposure to air.</p> <p>Application rates higher than label directions and contrary to label instruction could cause the gas concentrations to reach the lower flammability level which is 1.79% by volume (17,900 parts per million). When used according to the label directions, the amount of gas produced remains far below the lower flammability level.</p> <p>DO NOT confine the product in small gas-proof enclosures, such as a plastic bag. Such confinement could cause the gas concentration to reach the lower flammability level and may result in fire or explosion.</p> <p><b>RE-ENTRY PERIOD:</b> After application, wait until the Exposure Period has passed, then thoroughly ventilate for the required Ventilation Period and to the required Standard.</p> <p><b>Reentry</b> to fumigation areas is not recommended until measuring device(s) indicate that they are free of phosphine. The use of gas detection tubes or other measuring devices is recommended for monitoring gas levels in fumigation areas as phosphine gas may still be present even after treated commodities have been removed and fumigation areas ventilated.</p> <p>DO NOT re-enter a storage after application has commenced or once treated grain/ commodity has been emptied without wearing a full face respirator with particulate (P1) and phosphine gas filter cartridge (canister) or self-contained breathing apparatus, until a measuring device indicates that it is free of phosphine or the Total fumigation period (minimum exposure period plus ventilation period) has elapsed.</p>
---------------------	--

<p>Protections:</p>	<p><b>PROTECTION OF LIVESTOCK:</b> Disturbance of un-reacted Phosphide powder residue results in release of more phosphine gas. Residues of Phosphine gas or un-reacted Phosphide powder in treated grain/commodity will be harmful if fed to animals, including poultry. Ensure feed is well mixed and that such residues are not present before feeding. DO NOT feed treated grain/commodity to animals, including poultry, until the Total Fumigation Period (Exposure plus Ventilation) plus the Withholding Period has expired.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEA AND ENVIRONMENT:</b> This product is highly toxic to wildlife. Dangerous to fish. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.</p>
---------------------	--

<p>Storage and Disposal:</p>	<p><b>STORAGE AND DISPOSAL:</b> Store Fumaphos in the closed, original container in a cool, dry, well-ventilated locked area, out of the reach of children and unauthorised persons and away from all dwellings, animals, food, feedstuffs, seed and fertilisers.</p> <p><b>DO NOT</b> store or carry container in vehicle cabins (this includes glove compartments, luggage compartments or other common air-spaces).</p> <p>Keep away from water and liquids. Water and many liquids cause immediate release of phosphine from the product. Uncontrolled release of phosphine may result in fire or explosion and release of gas will pose a serious risk of injury to workers and bystanders. After fumigation with the product remove the spent blanket (bag) and ensure residual phosphide is destroyed before disposal, e.g. by swamping with dilute acid or soapy water in open air until bubbling ceases. Dispose of deactivated residues below 500mm in an approved disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots.</p> <p><b>Foil packaging</b></p> <p>Puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.</p> <p><b>Outer metal container</b></p> <p>Triple-rinse containers before disposal. If recycling, replace cap and return clean containers to recycler or designated collection point.</p> <p>If not recycling, break, crush, or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.</p>
------------------------------	---

<p>Safety Directions:</p>	<p><b>SAFETY DIRECTIONS:</b> Very dangerous. Product releases dangerous phosphine gas slowly in moist air and immediately if wet. Can kill if inhaled or swallowed. <b>DO NOT</b> inhale dust or vapour. Avoid contact with eyes and skin. Open container in the open air. Keep away from water and liquids. Keep away from naked flames. Forms toxic gas. Use the entire contents of container in one operation. Wash hands after use. When opening the container or using the product wear elbow-length PVC gloves and full face-piece respirator with combined dust and gas cartridge (canister) or supplied air respirator. After each day's use wash gloves and respirator with detergent and warm water.</p>
---------------------------	--

<p>First Aid Instructions:</p>	<p><b>FIRST AID:</b> If poisoning occurs, contact a doctor or Poisons Information Centre on Australia 131126. Do not give direct mouth-to-mouth resuscitation if swallowed. To protect rescuer, use airviva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.</p>
--------------------------------	---

<p>First Aid Warnings:</p>	<p>Do not give direct mouth-to-mouth resuscitation if swallowed. To protect rescuer, use airviva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.</p>
----------------------------	--

**DIRECTIONS FOR USE:**

**Safety and handling of Phosphine Products** – Phosphine is a highly dangerous fumigant and fumigation should only be undertaken in situations where the safety of workers and the public can be ensured. Observe all RESTRAINTS, PRECAUTIONS and instructions on the label.

**BEFORE** using Fumaphos Fumigation Blankets you should consider the following:

**Timing of treatment** – If it will be necessary to move grain/commodity before the Total Fumigation Period has expired, then fumigation should NOT be commenced. Movement of treated commodities or empty containers during application, fumigation exposure or ventilation, risks exposure of transport and handling workers and the public to harmful levels of phosphine and is contrary to label instruction.

The Total Fumigation Period is the sum of the time required for Exposure to phosphine and the time needed to ventilate the grain. A shortened Exposure Period will not be effective for storage pest control and a reduced Ventilation Period poses a serious risk of phosphine gas poisoning to workers and bystanders. In addition a Withholding Period of two days is required after completion of ventilation before the grain is allowed to be used for human consumption or for animal feed. See Notes 4 & 5 for a detailed description of the Minimum Exposure Period and the Ventilation Period.

PESTS/ COMMODITY/ SITUATION See Note 1 for description of well sealed* and Note 2 for storage pests controlled	COMMODITY	APPLICATION See note 3		FUMIGATION PERIOD [TOTAL OF THE MINIMUM EXPOSURE PERIOD PLUS VENTILATION PERIOD]		WITH-HOLDING PERIOD	TOTAL OF (Exposure+ Ventilation+ Withholding)
		BASIC RATE (g. phosphine per m3)	VOLUME TREATED per 3.4kg pack	MINIMUM EXPOSURE PERIOD See Note 4	VENTILATION PERIOD See Note 5		
Storage pests in:  All well-sealed* structures	Raw cereal grains (such as barley, maize, millets, oats, rice, rye, sorghum, triticale, wheat); Other food commodities (such as flour and other milled cereal products, breakfast cereals, dried fruits, dried vegetables, dried pulses, other dried foods, peanuts, oilseeds, cocoa and coffee beans); Seeds for propagation; Bulk stockfeed.	1.5	750 cubic m or 600 tonne wheat	7 days when temperature is above 25°C.  10 days when temperature is 15° to 25°C.  20 days for surface only application to bulk commodities in well sealed* structures greater than 375 m3 capacity (e.g. greater than 300 tonnes wheat).	1-5 days	2 days	10-14 days  13-17 days  23-27 days
		0.6	1870 cubic m or 1500 tonne wheat				23 days
Well-sealed* plastic-covered bunker storages of not less than 1000 tonnes capacity							
Bales, cases, hogsheads in well sealed* fumigation enclosures.	Tobacco	1.5	750 cubic m	7 days	2-3 days	NIL	9-10 days
Well-sealed* empty warehouses, elevators, stores, structures and fumigation enclosures.	Nil			7 days when temperature is above 25°C.  10 days when temperature is 15° to 25°C.	1-5 days	NIL	8-12 days  11-15 days

**NOTES:****1) FUMIGATION WILL CONTROL ALL STAGES OF INSECTS ONLY IN**

**STRUCTURES/ENCLOSURES THAT ARE WELL SEALED\***. Well sealed structures/enclosures are fumigation chambers, well sealed silos, sheds and buildings, and other fumigation enclosures made gas-tight with gas-proof sheeting. Well sealed means permanent sealing of porous surfaces, seams and cracks and temporary sealing of intake and/or outlet valves, doors, fan housings, windows and hatches. For further information, see appropriate industry advisory documents such as Grains Research and Development Corporation 'Advice' sheet 'Sealed Silos Save', available from State Departments of Agriculture or Primary Industries. Increasing the application rate will not compensate for gas lost from an unsealed enclosure.

**NOTE: STRUCTURES MUST BE WELL SEALED. IF THEY ARE NOT, FUMIGATION WILL NOT GIVE ADEQUATE CONTROL, AND WOULD BE CONTRARY TO LABEL DIRECTIONS.**

**2) STORAGE PESTS** include: lesser grain borer, cadelle, cigarette beetle, confused flour beetle, dried fruit beetle, flat grain beetle, merchant grain beetle, red-legged ham beetle, rust-red flour beetle, saw-toothed grain beetle, skin and hide beetle, spider beetles, warehouse beetle, Angoumois grain moth, Indian meal moth, Mediterranean flour moth, mottled grain moth, raisin moth, tobacco moth, tropical warehouse moth, psocids, stored products mites, bean weevil, coffee bean weevil, granary weevil, maize weevil, pea weevil and rice weevil. Approved treatment dosages will also kill any cockroaches, rats and mice present.

**3) PHOSPHINE APPLICATION RATES** are based on the internal volume of the structures to be fumigated; they apply equally to full or partly filled or empty structures and they apply to all commodities. The commodity equivalent rates (g/tonne) should only be used when the commodity stowage factor is known; they apply only when the storage structures are full or nearly full or when part-filled structures are dosed on the tonnage equivalents of their internal volumes. The calculated commodity equivalent dosage must be based on the rate per volume.

**4) MINIMUM EXPOSURE PERIODS** are needed to allow products to react to completion and to expose insects for long enough to kill all stages. A **SHORTENED EXPOSURE PERIOD CANNOT BE COMPENSATED FOR BY INCREASED DOSAGE**. Insect death and reaction of the product are both slower at lower temperatures. Temperatures specified are those within the commodity to be fumigated. The minimum exposure period should start from time of completion of application of product.

**5) VENTILATION PERIOD— ON COMPLETION OF EXPOSURE PERIOD:**

Ventilation of structures is complete only when phosphine concentrations measured at appropriate locations in the enclosure and work area are below the Threshold Limit Value - Time Weighted Average (TLV-TWA) exposure standard of 0.3 ppm. The following are minimum ventilation periods required and may need to be increased to ensure the exposure standard is not exceeded.

**Minimum Ventilation Periods:****Structures, including bunker storages, containing treated commodities:**

- a) Without through flow (i.e. access only through the headspace): not less than 5 days
- b) With through flow and natural draught (wind): For structures of 300 tonnes or greater capacity: 2 to 5 days depending on size.  
For structures of less than 300 tonnes capacity: 2 days
- c) With through flow and forced draught (flash-proof fan) operated 2 hours on and 2 hours off: not less than 1 day.

**Tobacco:** In bales: not less than two days. In cases and hogsheads: not less than 3 days.

**Empty Buildings and Enclosures:**

- a) Without through flow: 5 days
- b) With through flow and natural draught (wind): For structures of 300 tonnes or greater capacity: not less than 2 days, depending on structure size, openings and prevailing wind speed. For structures of less than 300 tonnes capacity: 2 days.
- c) With through flow and forced draught (flash-proof fan) operated 2 hours on and 2 hours off: 1 to 2 days depending on size of structure

