

DANGEROUS POISON

KEEP OUT OF REACH OF CHILDREN

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

TITAN

Aluminium Phosphide Blanket Insecticide

Active Constituents:

330g/kg PHOSPHINE (PH₃) present as ALUMINIUM PHOSPHIDE

Each 3.4kg BLANKET liberates 1122g PHOSPHINE (PH₃)

OR

each 1.7kg BLANKET liberates 561g PHOSPHINE (PH₃)

OR

each 680g BLANKET liberates 224g PHOSPHINE (PH₃)

OR

each 340g BLANKET liberates 112g PHOSPHINE (PH₃)

GROUP 8B INSECTICIDE

For control of insect pests of stored products in certain situations as per the Directions for Use Table.

IMPORTANT: READ THOROUGHLY BEFORE OPENING OR USING THIS PRODUCT.

NET CONTENTS: 3.4kg (1 blanket contains 100 x 34g measure packs which it is illegal to sell separately)

OR

NET CONTENTS: 1.7kg (1 blanket contains 50 x 34g measure packs which it is illegal to sell separately)

OR

NET CONTENTS: 680g (1 blanket contains 20 x 34g measure packs which it is illegal to sell separately)

OR

NET CONTENTS: 240g (1 blanket contains 10 x 34g measure packs which it is illegal to sell separately)

APVMA Approval No.: 82665/106389



TITAN AG Pty Ltd

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IN A TRANSPORT EMERGENCY

DIAL 000

POLICE OR FIRE BRIGADE

TRANSPORT AND HANDLING
NOT A DANGEROUS GOOD
ACCORDING TO THE AUSTRALIAN
DANGEROUS GOODS (ADG) CODE
FOR TRANSPORT BY ROAD AND RAIL.

DIRECTIONS FOR USE:**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 in transit or likely to be in transit during Exposure and/or Ventilation Periods.

DO NOT use in road transport vehicles (including a truck or road hauled container).

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, 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 reticulation 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.

BEFORE using TITAN Aluminium Phosphide Blanket 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.

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.

Directions for use Table for currently approved 3.4kg pack							
PESTS / STRUCTURES / SITUATIONS See Note 1 for description of wellsealed* and Note 2 for storage pests controlled	COMMODITY	APPLICATION See note 3		FUMIGATION PERIOD# #[TOTAL OF THE MINIMUM EXPOSURE PERIOD PLUS VENTILATION PERIOD]		WHP	TOTAL OF (Exposure + Ventilation + Withholding)
		BASIC RATE (g phosphine per m ³)	VOLUME treated per blanket	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 vegetable, other dried foods, peanuts, oilseeds, cocoa and coffee beans); Seeds for propagation; Bulk stockfeeds	1.5	750m ³ or 600 tonne wheat	7 days when temperature is above 25°C	1-5 days	2 days	10-14 days
				10 days when temperature is 15°C to 25°C			13-17 days
Well sealed* plastic-covered bunker storages of not less than 1000 tonnes capacity	0.6	1870m ³ or 1500 tonne wheat	20 days for surface only application to bulk commodities in well sealed* structures greater than 375m ³ capacity (e.g. greater than 300 tonnes wheat)	23-27 days			
Bales, cases, hogsheads in well sealed* fumigation enclosures	Tobacco	1.5	750m ³	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	1-5 days		8-12 days
				10 days when temperature is 15°C to 25°C			11-15 days

Directions for use Table for proposed 1.7kg pack

PESTS / STRUCTURES / SITUATIONS See Note 1 for description of wellsealed* and Note 2 for storage pests controlled	COMMODITY	APPLICATION See note 3		FUMIGATION PERIOD# #[TOTAL OF THE MINIMUM EXPOSURE PERIOD PLUS VENTILATION PERIOD]		WHP	TOTAL OF (Exposure + Ventilation + Withholding)
		BASIC RATE (g phosphine per m ³)	VOLUME treated per blanket	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 vegetable, other dried foods, peanuts, oilseeds, cocoa and coffee beans); Seeds for propagation; Bulk stockfeeds	1.5	375m ³ or 300 tonne wheat	7 days when temperature is above 25°C	1-5 days	2 days	10-14 days
				10 days when temperature is 15°C to 25°C			13-17 days
Well sealed* plastic-covered bunker storages of not less than 1000 tonnes capacity	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 vegetable, other dried foods, peanuts, oilseeds, cocoa and coffee beans); Seeds for propagation; Bulk stockfeeds	0.6	935m ³ or 750 tonne wheat	20 days for surface only application to bulk commodities in well sealed* structures greater than 375m ³ capacity (e.g. greater than 300 tonnes wheat)	1-5 days	2 days	23-27 days
				23 days			
Bales, cases, hogsheads in well sealed* fumigation enclosures	Tobacco	1.5	375m ³	7 days	2-3 days	NIL	9-10 days
Well sealed* empty warehouses, elevators, stores, structures and fumigation enclosures	Nil	1.5	375m ³	7 days when temperature is above 25°C	1-5 days	NIL	8-12 days
				10 days when temperature is 15°C to 25°C			11-15 days

Directions for use Table for proposed 680g pack

PESTS / STRUCTURES / SITUATIONS See Note 1 for description of wellsealed* and Note 2 for storage pests controlled	COMMODITY	APPLICATION See note 3		FUMIGATION PERIOD# #[TOTAL OF THE MINIMUM EXPOSURE PERIOD PLUS VENTILATION PERIOD]		WHP	TOTAL OF (Exposure + Ventilation + Withholding)
		BASIC RATE (g phosphine per m ³)	VOLUME treated per blanket	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 vegetable, other dried foods, peanuts, oilseeds, cocoa and coffee beans); Seeds for propagation; Bulk stockfeeds	1.5	150m ³ or 120 tonne wheat	7 days when temperature is above 25°C	1-5 days	2 days	10-14 days
				10 days when temperature is 15°C to 25°C			13-17 days
Well sealed* plastic-covered bunker storages of not less than 1000 tonnes capacity	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 vegetable, other dried foods, peanuts, oilseeds, cocoa and coffee beans); Seeds for propagation; Bulk stockfeeds	0.6	374m ³ or 300 tonne wheat	20 days for surface only application to bulk commodities in well sealed* structures greater than 375m ³ capacity (e.g. greater than 300 tonnes wheat)	1-5 days	2 days	23-27 days
				23 days			
Bales, cases, hogsheads in well sealed* fumigation enclosures	Tobacco	1.5	150m ³	7 days	2-3 days	NIL	9-10 days
Well sealed* empty warehouses, elevators, stores, structures and fumigation enclosures	Nil	1.5	150m ³	7 days when temperature is above 25°C	1-5 days	NIL	8-12 days
				10 days when temperature is 15°C to 25°C			11-15 days

Directions for use Table for proposed 340g pack

PESTS / STRUCTURES / SITUATIONS See Note 1 for description of wellsealed* and Note 2 for storage pests controlled	COMMODITY	APPLICATION See note 3		FUMIGATION PERIOD# #[TOTAL OF THE MINIMUM EXPOSURE PERIOD PLUS VENTILATION PERIOD]		WHP	TOTAL OF (Exposure + Ventilation + Withholding)
		BASIC RATE (g phosphine per m³)	VOLUME treated per blanket	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 vegetable, other dried foods, peanuts, oilseeds, cocoa and coffee beans); Seeds for propagation; Bulk stockfeeds	1.5	75m³ or 60 tonne wheat	7 days when temperature is above 25°C	1-5 days	2 days	10-14 days
				10 days when temperature is 15°C to 25°C			13-17 days
Well sealed* plastic-covered bunker storages of not less than 1000 tonnes capacity	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 vegetable, other dried foods, peanuts, oilseeds, cocoa and coffee beans); Seeds for propagation; Bulk stockfeeds	0.6	187m³ or 150 tonne wheat	20 days for surface only application to bulk commodities in well sealed* structures greater than 375m³ capacity (e.g. greater than 300 tonnes wheat)	1-5 days	2 days	23-27 days
							23 days
Bales, cases, hogsheads in well sealed* fumigation enclosures	Tobacco	1.5	75m³	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	1-5 days		8-12 days
				10 days when temperature is 15°C to 25°C			11-15 days

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

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 gasproof 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 loss 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, sawtoothed 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. Such treatment doses 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.

The application rate of 1.5 g phosphine per 1 metre³ is equivalent to:

(3.4kg pack)			Number of Blanket
Capacity of fumigation enclosure			
tonnes wheat	bushels	cubic metres	
300	11000	375	1
600	22000	750	2
1200	44000	1500	4

(680g pack)			Number of Blanket
Capacity of fumigation enclosure			
tonnes wheat	bushels	cubic metres	
60	2200	75	1
120	4400	150	2
240	8800	300	4

(1.7kg pack)			Number of Blanket
Capacity of fumigation enclosure			
tonnes wheat	bushels	cubic metres	
150	5500	188	1
300	11000	350	2
600	22000	750	4

(340g pack)			Number of Blanket
Capacity of fumigation enclosure			
tonnes wheat	bushels	cubic metres	
30	1100	38	1
60	2200	75	2
120	4400	150	4



- 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 tablets 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 Time Weighted Average (TWA) exposure standard of 0.3ppm. 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 throughflow (i.e. access only through the headspace): not less than 5 days.
- b) With throughflow 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 throughflow 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 throughflow: 5 days.
- b) With throughflow 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 throughflow and forced draught (flash-proof fan) operated 2 hours on and 2 hours off: 1 to 2 days depending on size of structure.

GENERAL INSTRUCTIONS

TITAN Aluminium Phosphide Blanket 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 system, etc.) containing copper/copper alloy components, photographic film or copy paper. Phosphine corrodes copper based materials.

Application (as appropriate to product type)

- 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 whole Blanket in one operation.
- Vacate all personnel as quickly as possible and seal off the treatment area.
- When treating temporary bunker storages of bulk grains make a longitudinal slit of 35cm down to 2 metres below and parallel to the crest 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.
- Calculate use rate e.g. one 3.4kg blanket will liberate 1122g phosphine which will fumigate 750m³ (=1122÷1.5) of bulk commodities in a well sealed* storage OR one 340g blanket will liberate 112g phosphine which will fumigate 74m³ (=112÷1.5) of bulk commodities in a well sealed storage (see Directions for Use Table).
- When fumigation blankets are used in large temporary bunker type storages of several thousand tonnes they should be placed down slopes with upper end to the equivalent of about 2 metres vertically below the crest.

INSECTICIDE RESISTANCE WARNING

For insecticide resistance management, TITAN Aluminium Phosphide Blanket is a Group 8B insecticide. Some naturally occurring weed biotypes resistant to TITAN Aluminium Phosphide Blanket and other Group 8B insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. The effectiveness of TITAN Aluminium Phosphide Blanket on resistant individuals could be significantly reduced. Since the occurrence of resistant individuals is difficult to detect prior to use, TITAN AG Pty Ltd accepts no liability for any losses that may result from the failure of this product to control resistant insects.

Application of CELPHIDE FUMIGATION BLANKET 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.

FLAMMABLE: Keep away from naked flame.

PRECAUTIONS

Show the following warning sign prominently at all approaches to every fumigation site.

“DANGER – POISON GAS — KEEP AWAY”

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.

Warning: 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. 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.

DO NOT confine the product in small gas-proof enclosures such as a plastic bag. Such confinement could cause the gas concentrations to reach the lower flammability level, and may result in fire or explosion.

RE-ENTRY PERIODS

After application, wait until the Exposure Period has passed, then thoroughly ventilate for the required Ventilation Period and to the required Standard. Re-entry 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.

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.

PROTECTION OF LIVESTOCK

Disturbance of unreacted phosphide powder residue results in release of more phosphine gas. Residues of phosphine gas or unreacted 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.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

This product is highly toxic to wildlife. Dangerous to fish. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

STORAGE AND DISPOSAL

Store 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.

DO NOT store or carry container in vehicle cabins (this includes glove compartments, luggage compartments or other common air-spaces). 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. Triple rinse the empty containers with soapy water to ensure residual phosphide is destroyed. Dispose of rinsings in an approved disposal pit. Destroy empty containers by breaking, crushing or puncturing them. Dispose of the containers at a local authority landfill. If no local authority landfill is available, bury the containers below 500mm in an approved disposal pit. DO NOT burn empty containers or product.

SAFETY DIRECTIONS:

Very dangerous. Product releases dangerous phosphine gas slowly in moist air and immediately if wet. Can kill if inhaled or swallowed. DO NOT 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 entire contents in one operation; if not possible, seal thoroughly with water proof adhesive tape or airtight closure. 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 days use, wash gloves and respirator (if rubber wash with detergent and warm water).

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126. Do not give direct mouth-to-mouth resuscitation if swallowed. To protect rescuer, use airway, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

MATERIAL SAFETY DATA SHEET

Additional information is listed in the material safety data sheet (MSDS). A material safety data sheet for TITAN Aluminium Phosphide Blanket is available from TITAN AG Pty Ltd on request. Call Customer Service on (02) 9999 6655 or visit www.titanag.com.au

CONDITIONS OF SALE: TITAN AG Pty Ltd shall not be liable for any loss injury damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale supply use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on TITAN AG's skill or judgment in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of TITAN AG Pty Ltd has any authority to add to or alter these conditions.

BATCH NO:

DATE OF MANUFACTURE:

