Read the label before opening the container. For full particulars, see enclosed leaflet.

**ONLY FOR SALE TO AND USE BY REGISTERED PEST CONTROL OPERATORS**

**KEEP OUT OF REACH OF CHILDREN AND ANIMALS**

**RESTRICTED USE AGRICULTURAL REMEDY**

THIS REMEDY IS RESTRICTED DUE TO ACUTE TOXICITY. THIS REMEDY MAY ONLY BE SOLD TO AND USED BY REGISTERED PEST CONTROL OPERATOR, OR BY SOMEONE UNDER THE SUPERVISION OF A REGISTERED PEST CONTROL OPERATOR, AND ONLY FOR THOSE USES COVERED BY THE PEST CONTROL OPERATOR'S SCOPE OF REGISTRATION, AND ONLY AS DIRECTED ON THIS LABEL.

# ALUMINIUM PHOSPHIDE PELLETS

South Africa Reg. No: L6279 Act No. 36 of 1947

IRAC INSECTICIDE GROUP CODE: 8B

A fumigant for the control of stored product pests in maize, wheat, sorghum, groundnuts, soya beans, sunflower seed, barley, oats, rye, nuts, dried fruit, tobacco and farinaceous products of the above mentioned agricultural products as well as rodents.

**ACTIVE INGREDIENT:**

Aluminium phosphide (fumigant).....560g/kg

**HAZARD STATEMENTS**

- In contact with water releases flammable gases which may ignite spontaneously.
- Fatal if swallowed.
- Toxic in contact with skin.
- Fatal if inhaled.
- Very toxic to aquatic life

**PRECAUTIONARY STATEMENTS**

- Wear protective gloves/protective clothing/ eye protection/face protection.
- Avoid release to the environment.



**DANGER**

**Product Information: 072 678 8226**
**In case of poisoning: 082 446 8946**
**Poison Centre: +27 861 555 777**

enviro™ bio-chem

**Registration holder: RT Chemicals CC**
**Co. Reg. No: CK87/21925**
44 Kerk Street, Lichtenburg NW, South-Africa
Tel: +27 12 006 0063 | Fax: +27 86 541 7948
Web: www.envirobiochem.co.za

Expiry Date:
Batch No:
Date of Manufacture:

**UN No. 1397**

**WARNINGS:**

- Fatal if swallowed.
- Toxic in contact with skin.
- Fatal if inhaled.
- Very toxic to aquatic life.
- Store under lock and key in a cool, dry well-ventilated place away from food and feedstuffs.
- Loose pellets may not be sold of stored for future use.
- **ALUMINIUM PHOSPHIDE PELLETS** should only be applied by adult personnel well instructed in its use and familiar with the potential hazards of fumigation and all necessary precautionary measures.
- Recently fumigated grain may, upon removal, liberate harmful concentrations of phosphine gas. Wear a suitable gas mask.
- Phosphine reacts with copper, copper compounds, silver and gold. Pay special attention to electrical equipment. Protect electric boxes, switches and relays adequately by covering with plastic or coating with molten paraffinic wax.
- **FLAMMABLE** – Store away from sparks and flames. Phosphine gas is inflammable.
- PROTECT THE PELLETS AGAINST WATER OR ANY OTHER LIQUID. Never bring pellets into contact with water or other liquids.
- In contact with water releases flammable gases which may ignite spontaneously.
- Keep away from inhabited areas.
- Container should be resealed immediately and not be left open for any length of time.
- **In case of poisoning, call a doctor and make label available to him.**

**Although this remedy has been extensively tested under a large variety of conditions the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal soil, climatic and storage conditions, compatibility with other substances not indicated on the label and the occurrence of resistance of the pest against the remedy concerned as well by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animal or for lack of performance of the remedy concerned due to failure or the user to follow the label instructions or to the occurrence or conditions, which could not have been foreseen in terms of the registration. Consult the supplier in event of any uncertainty.**

**PRECAUTIONS:**

- Keep away from any possible contact with water, because of violent reaction and possible flash fire.
- Avoid breathing dust/fume/mist/vapours/spray.
- Wash hands, forearms, and face thoroughly after handling.
- Do not eat, drink, or smoke when using this product.
- Wear protective gloves/protective clothing/eye protection/face protection.
- [In case of inadequate ventilation] wear respiratory protection.
- Do not inhale the fumes. Normally fumigation may be carried out without the use of a gas masks but gas mask should be at hand and be equipped with special canister for phosphine in case of emergence. Never enter fumigated area when phosphine concentration exceeds 1 ppm without a gas mask. Phosphine has a carbide odour which acts as a warning of the presence of the gas. If a strong smell of phosphine is noticed before the charging operation is completed, a gas mask must be used.
- Use rubber gloves when handling the pellets.
- On accidental contact with skin, wash off with soap and water.
- Specific treatment is urgent (see supplementary first aid instructions on this Safety Data Sheet).
- Take off contaminated clothing.
- Wear a gas mask when handling recently treated grain. Use a gas detector to determine the level of gas present.
- Use total contents of immediate container in one operation if possible. When contents are not fully used, reseal the container and store in a cool dry place.
- Dispose of contents/container in accordance with local/regional/ national regulations and do not re-use for any other purpose.
- Inhabited buildings must not be fumigated. If warehouses are attached to inhabited buildings the latter must be evacuated before fumigation takes place.

**RELEVANT SUBSTANCES:**
Ammonium carbamate <50%

**SYMPTOMS OF PHOSPHINE POISONING:**
Small quantities - Fatigue, tinnitus, headache, nausea, tight chest, uneasiness.
Large quantities - the above symptoms as well as vomiting, stomach pain, diarrhoea, vertigo, chest pains and dyspnea. Further exposure will result in cyanosis, ataxia, anoxemia, convulsions, unconsciousness and death.

**FIRST AID TREATMENT:**
INHALATION: Remove person to fresh air and keep comfortable for breathing.
INGESTION: Immediately call a POISON CENTER or doctor/physician.
SKIN CONTACT: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.
EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

**NOTE TO PHYSICIAN:**
Treat symptomatically. In case of swallowing, perform gastric lavage.
Should hypotension develop, consider the cardiac tonic, Dopamine at 5 to 10µg/kg/min.

Complications are:
- Incipient pulmonary oedema - consider glucocorticoids e.g. 500 to 1 000mg 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.
- Twenty (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.

**RESISTANCE WARNING:**
For resistance management, **ALUMINIUM PHOSPHIDE PELLETS** is a **group code 8B** insecticide. Any insect population may contain individuals naturally resistant to **ALUMINIUM PHOSPHIDE PELLETS** and other **group code 8B** insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **ALUMINIUM PHOSPHIDE PELLETS** or any other **group code 8B** insecticide.
To delay insecticide resistance:
- Avoid exclusive repeated use of insecticide from the same insecticide group code.
- Alternate with products form different insecticide group codes.
- Integrate other control methods (chemical, biological) into insect control programmes.

For specific information on resistance management contact the registration holder of this product.

**DIRECTIONS FOR USE:** Use only as directed
Aluminium phosphide is for the fumigation of agricultural commodities, specific processed food and animal feeds in silos, railway and road trucks, space fumigation of flour mills, warehouses and rodents. Phosphine, with its high penetration properties, kills rodents and adult and pre-adult stages of insects. Phosphine effectively controls the following insects:

**INSECTS:**

| | |
|---|---|
| *Sitotroga Cerealella* | Angoumois Grain Moth |
| *Tenebroides Mauritanicus* | Cadella |
| *Tribolium Spp.* | Flour Beetle |
| *Lasioderma Serricorne* | Tobacco (Cigarette) Beetle |
| *Rhizoperta Dominica* | Lesser Grain Borer |

| | |
|---|---|
| *Oryzaephilus Surinamensis* | Saw-Toothed Grain Beetle |
| *Acanthoscelides Obtectus* | Bean Weevil |
| *Bruchus Pisorum* | Pea Weevil |
| *Sithophilus Granarius* | Granary Weevil |
| *Sithophilus Oryzae* | Rice Weevil |
| *Plodia Interpunctella* | Indian Meal Moth |
| *Ephestia Cautella* | Tropical Warehouse Moth |
| *Ephestia Kühniella* | Mediterranean Flour Moth |
| *Cryptolestes Spp* | Flat Beetle |
| *Sithophilus Zeamais* | Maize Weevil |
| *Ephestia Cautella* | Tobacco Moth |

**APPLICATION:**

- **ALUMINIUM PHOSPHIDE PELLETS** can be added mechanically or by hand to grain as it tumbles into silos.
- For flat storage, pellets are inserted by means of a special probe to push them deep into the grain.
- For all fumigations it is necessary to seal all possible leaks or cover the commodity with gastight polyethylene tarpaulins.
- Gas masks are not normally required but should be on hand fitted with a canister against phosphine gas in case of an emergency.
- Never enter a fumigated area when the gas concentration exceeds 1ppm without a gas mask (phosphine testing by means of an Auer or Dräger detector).
- After the required period of fumigation, air thoroughly for 2 to 3 hours by removing all coverings and opening of hatches, windows etc. before entering and handling the commodity.

| 1. CEREAL GRAINS AND OILSEEDS - BULK STORAGE | | | | | |
|---|---|---|---|---|---|
| Method of storing and directions for application | Minimum exposure time | DOSAGE | | | |
| | | Maize, wheat, sorghum, rice and other cereal grains, shelled groundnuts with bulk density of approximately 700 – 800kg/m³ | Rye, oats, barley and buck wheat with a bulk density of approximately 600 – 700kg/m³ | Sunflower seed with a bulk density of approximately 400kg/m³ | Unshelled groundnuts with a bulk density of approximately 300kg/m³ |
| a) Absolutely gas tight silo bins*. Apply on the conveyor belt while grain is being fed into the silo bin. Silo bins must be filled completely in shortest possible time. | 14 days | 11 pellets per ton | 13 pellets per ton | 21 pellets per ton | 27 pellets per ton |
| b) Reasonably gas tight silo bins**. Apply on the conveyor belt while grain is being fed into the silo bin. Silo bins must be filled completely in shortest possible time. | 5 days | 30 pellets per ton | 35 pellets per ton | 56 pellets per ton | 75 pellets per ton |

| 1. CEREAL GRAINS AND OILSEEDS - BULK STORAGE | | | |
|---|---|---|---|
| **Method of storing and directions for application** | **Minimum exposure time** | **DOSAGE** | |
| c) FGD and FZ railway trucks. Trucks to be made gas proof. Apply pellets uniformly during loading or distribute over floor of truck. | 5 days | 1 050 pellets per truck for all commodities | The fumigation may only be done in collaboration with the control board concerned and Spoornet. |
| * Silos that can retain a pressure of 50mm paraffin in an open arm manometer for longer than 22 seconds.<br>** Silos that can retain a pressure of 50mm in an open arm manometer for 10 to 22 seconds. | | | |

| 2. CEREAL GRAINS, OILSEEDS AND OTHER FOOD COMMODITIES - BAGGED | | | |
|---|---|---|---|
| **Method of storing and directions for application** | **Minimum exposure time** | **DOSAGE** | **REMARKS** |
| Grain Bag Stacks. Distribute pellets evenly throughout the stack. Stacks must be covered with plastics sheeting. | 5 days | 20 pellets/$m^3$ | Ensure that the bagged commodity is sealed in gas tight fumigation sheets. |
| **3. CEREAL(PROCESSED & UNPROCESSED) LEGUMES, DRIED FRUIT & OTHER PACKED FOOD COMMODITIES** | | | |
| **Method of storing and directions for application** | **Minimum exposure time** | **DOSAGE** | **REMARKS** |
| a) Small scale storage. Commodities to be treated must be exposed to the gas in a gas tight area or under gas tight tarpaulins. | 5 - 8 days | 15 - 20 pellets/$m^3$ | Dosage depends on gas tightness of space containing commodities. |
| b) Pests in empty storage areas – space fumigation. Seal premises thoroughly before application. | 3 - 6 days | 3 - 5 pellets/$m^3$ | Dosage depends on gas tightness of premises. |
| c) Tobacco. ONLY for fumigation of raw and processed tobacco, in stacks, bales, cases or hogsheads. | 4 days but preferably 8 - 10 days | 5 pellets/$m^3$ | Do not exceed dosage. Cover with gas tight tarpaulin and seal down. |
| * Silos that can retain a pressure of 50mm paraffin in an open arm manometer for longer than 22 seconds.<br>** Silos that can retain a pressure of 50mm in an open arm manometer for 10 to 22 seconds. | | | |

| PEST | DOSAGE | REMARKS |
|---|---|---|
| Gerbilles | 5 pellets per hole | Shallow disc the area to block all holes. Next day only treat active holes by placing 5 pellets as deep into burrow as possible. This is about 1 metre and retreat the next day if new holes are detected. It is recommended to apply pellets in the afternoon before gerbilles become active in the evening. |
| Field rats and mice | 5 or more pellets per hole depending on burrow size | Application method to be adapted to suit the circumstances in each case but in general place pellets as deep into rodent burrow as possible. Retreat after a week if further activity is detected. |
| Moles | 5 pellets as far into the tunnel as possible | Apply in the morning when moles are generally less active.Avoid unnecessary noise and movement as moles are easily alerted and the smell of gas causes them to block the tunnels and escape death. All burrows in an area must be treated simultaneously. Treat new mound by carefully removing soil to expose burrow entrance. Ensure tunnel is not blocked with soil. |

**GENERAL DOSING:**

1. Damp soil gives better results as the tablets is activated more easily into gas.
2. Stuff a ball of paper into the hole for sealing, cover with soil and tramp down. Successful control of rodents depends on sufficient exposure to the gas.