

FARM-AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Registration Number: 2005/011761/07

Tel + 27 31 003 3486 • Fax + 27 31 502 5825

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: FARM-AG ALUMINIUM PHOSPHIDE
Product Use: Fumigant
Effective Date: May 2014
Revision Date: August 2017

24 Hr Emergency Number: 082 771 2712**In case of poisoning:**

Poison Information Centre: 082 446 8946
 Tygerberg Hospital: (021) 931 6129
 Poison Emergency Enquiries (021) 689 5227

In case of Spillage:

HAZMAT: 0800 147 112

2. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: Aluminium phosphide
Chemical Name: Aluminium phosphide (IUPAC)
CAS No.: 20859-73-8
Chemical Family: Inorganic compound
Chemical Formula: AlP
Molecular weight: 58.0
Formulation: Aluminium phosphide 570 g/kg
 Tablet
Use: Fumigant

Hazardous ingredients of toxicological concern:

Preparation with ignition inhibiting additives

2.1 Chem. Characterization Concentration

Aluminium phosphide 56 - 57%

Ammonium carbamate Xn

2.2 Chem. Characterization ConcentrationHydrogen phosphide 0.1 ml/m³ (ppm), 0.14 mg/m³/Odour threshold for hydrogen phosphide: from 0.02 up to 3 ppm depending on the sensitivity^{1b)}Ammonia 50 ppm, 35 mg/m³Carbon dioxide 5000 ppm, 9100 mg/m³**Symbol:** T+, F, N**R-phrases:** R 15/29-28-32-50**3. HAZARD IDENTIFICATION****Likely routes of exposure:**

On contact with water or acids the product develops the extremely flammable and toxic hydrogen phosphide (phosphine); ammonia and carbon dioxide

For humans: see Nos. 11 and 15 below**For the environment:** see No. 12 below

Harmful if swallowed.

FARM-AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Registration Number: 2005/011761/07

Tel + 27 31 003 3486 • Fax + 27 31 502 5825

4. FIRST AID MEASURES AND PRECAUTIONS

Inhalation:

In case of headache, dizziness, feeling of constriction, difficult breathing and nausea immediately leave the danger zone and seek fresh air; consult a physician; inhale products for acute treatment following exposition of smoke gas (eg a beclometasone (Ventolair®) spray, a dexamethasone (Auxiloson®) spray).

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.

Skin contact:

Remove any rests by brushing; only then use water for cleansing

Special aids required for First Aid measures:

Have methyl prednisolon (application by physician) and products for acute treatment following exposition of smoke gas (eg a beclometasone (Ventolair®) spray, a dexamethasone (Auxiloson®) spray) available

There is no specific antidote.

Treat symptomatically and supportively as and when required. Gastric lavage could be contraindicated due to probable mucosal damage.

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

Fire fighting:

Special hazards from the substance itself, its combustion products or from its vapours: in case of fires hazardous combustion gases are formed: caustic phosphoric acid aerosols (phosphoric pentoxide)

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 (SPILLAGE)

Personal precautions:

Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.

Environmental precautions:

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

Occupational spill:

Keep out unprotected persons and animals. Do not touch spilled material; stop leak if you can do it without risk.

Earth all equipment used when handling the product. Do not touch or walk through spilled material. Stop leak if possible without risk. Avoid runoff of product into sewers, water systems, basements or confined areas as it may cause fire/explosion. A vapour-suppressing foam could be used to reduce vapours. Thoroughly wash body areas, which come into contact with the product.

For spills: Use clean, non-sparking tools to collect absorbed material. Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind.

FARM-AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Registration Number: 2005/011761/07

Tel + 27 31 003 3486 • Fax + 27 31 502 5825

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Label drums with its content and dispose it in accordance with local regulations.

Open burning or dumping of this material is prohibited.

7. HANDLING AND STORAGE REQUIREMENTS**Handling:**

Operator should not be alone during handling and application of product. Remove sources of naked flame or sparks. Toxic if swallowed and by skin contact, and harmful if inhaled. Avoid contact with eyes and skin and inhalation of fumes. Avoid exposure to spray. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

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/PERSONAL PROTECTION

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.

Respirator:

It is usually safe to use the product without a mask or respirator. If the product is used in dusty or confined conditions, a mask or respirator suitable for protection from dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye protection:

Wear safety goggles or face shield.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Tablet

Colour: Greyish-green

Odour: garlic or carbide-like

pH-value (20 /C): 8-10

Melting point / range (in /C): aluminium phosphide > 500 /C 11)

Density: 1.2689 ± 0.0207

Inflammability: in contact with water / humidity, acids an extremely flammable gas is developed

Lower explosion limit: hydrogen phosphide 1.8 1a) (1.79-1.89)

FARM-AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Registration Number: 2005/011761/07

Tel + 27 31 003 3486 • Fax + 27 31 502 5825

Vapour pressure: hydrogen phosphide 34.6 bar (20/C)9**Settled appearance density:** (powder) 0.95 g/cm³**Solubility in water:** not applicable due to decomposition**10. STABILITY AND REACTIVITY****Storage stability:**

Stable for up to 2 years under normal warehouse and field conditions.

Hazardous decomposition:

Substances to be avoided: water and acids cause aluminium phosphide to decompose in a violent reaction into extremely flammable and toxic hydrogen phosphide.

Hazardous decomposition products: hydrogen phosphide, phosphoric pentoxide, phosphoric acid (No. 5.3)

Stabilizers available: yes

Change of aggregation condition: Influence on safety: uncontrolled development of hydrogen phosphide can cause fires.

11. TOXICOLOGICAL INFORMATION**Acute oral LD₅₀:** 25 mg/kg mg/kg in rats.**Acute dermal LD₅₀:** 1908 mg/kg in rats.**Acute inhalation LC₅₀:** 41.07 ppm.**Acute skin irritation:** Mild irritant.**Acute eye irritation:** Non irritant.**Sensitization:** Potential skin sensitizer.**12. ECOLOGICAL INFORMATION****ECOTOXICOLOGY:****Fish: Moderate toxic.**LC₅₀ (96 hours): 9.7 x 10⁻³ ppm6)**Daphnia:**LC₅₀ (48 hours): 0.2 mg/l7)**Ecotoxicity: phosphine decomposes in the atmosphere within 5 - 28 hours 8)****13. DISPOSAL CONSIDERATION****Pesticide disposal:**

Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product that cannot be reused or reprocessed should be disposed of in a landfill approved for pesticide disposal. Do not contaminate rivers, dams or any other water sources with the product or used containers. Comply with local legislation applying to waste disposal.

Package product wastes:

Emptied containers retain vapour and product residues. Observe all labelled safeguards. Destroy the emptied containers by perforation and flattening. Bury in an approved dump site. Do not re-use the empty container for any other purpose. Comply with any local legislation applying to disposal.

14. TRANSPORT INFORMATION**UN number:** 1397**Road Transport ADR/IRD:**

Class: 4.3

Packing group: I

Shipping name: Environmentally hazardous substance, N.O.S. (insecticide – aluminum phosphide)

Maritime Transport IMDG/IMO:

Class: 4.3

FARM-AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Registration Number: 2005/011761/07

Tel + 27 31 003 3486 • Fax + 27 31 502 5825

Packing group: I

Shipping name: Environmentally hazardous substance, N.O.S. (insecticide – aluminum phosphide)

Dangerous when wet 4 = main risk

Toxic = subsidiary risk

Very toxic to aquatic organisms

15. REGULATORY INFORMATION

Symbol: F, T+, N

Hazard description: highly flammable, very toxic, dangerous for the environment

Risk phrases:

R15/29 - Contact with water liberates toxic, extremely flammable gas.

R26/28 - Very toxic by inhalation and if swallowed.

R32 - Contact with acids liberates very toxic gas

R50 - Very toxic to aquatic organisms.

Safety phrases:

S1/2 - Keep locked up and out of the reach of children.

S3/9/49 - Keep only in the original container in a cool well-ventilated place.

S7/8 - Keep container tightly closed and dry.

S13 - Keep away from food, drink and animal feeding stuffs.

S20/21 - When using do not eat, drink or smoke.

S22 - Do not breathe dust.

S30 - Never add water to this product.

S43 - In case of fire, use dry sand, powder or CO₂. Never use water.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

Additional:

Empty packaging must not be reused

16. OTHER INFORMATION

Packaging:

Packed in 1 and 20 kg aluminum containers and labelled according to South African regulations and guidelines.

Disclaimer:

The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.