

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**SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION**

Product Name: FARMAG ZINC PHOSPHIDE
Product Use: Rodenticide
Creation Date: June 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

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: Zinc Phosphite
Chemical Name: Tri-zinc di-phosphide
Chemical family: Phosphine
CAS No.: 1314-84-7
EC no.: 215-244-5

Use: A ready to use bait poison for the control of Gerbilles (Tatera spp.) also known as "Nagmuis" or "Springhaasrotte".

Hazardous ingredients of toxicological concern:

<u>Inert:</u>	<u>Concern</u>	<u>% w/w present:</u>
Zinc Phosphide	Irritant	± 3% Min
Other inerts	Non	1% Max

Symbols: T
Indication of danger: Toxic
Risk-phrase(s): R20/22, R28, R43, R32, R36/38, R50

SECTION 3 - HAZARD IDENTIFICATION**Likely routes of exposure:**

Skin and eye contact, ingestion and inhalation.

May cause mild to moderate irritation to skin. May cause moderate to severe irritation to eyes and may cause damage.

Inhalation may cause irritation to respiratory system. Prolonged inhalation may produce drowsiness, lassitude and inability to concentrate.

Ingestion can cause immediate burning pain in the mouth, throat and abdomen, swelling of the larynx, and muscle paralysis, affecting ability to breathe. Other complications may involve jaundice and liver tenderness and enlargement from liver necrosis and anuria from renal tubular injury. Very toxic when swallowed. **Death is due to severe poisoning.**

SECTION 4 - FIRST AID MEASURES AND PRECAUTIONS**EMERGENCY AND FIRST AID PROCEDURES**

If swallowed: Immediately call a physician or transport the patient to nearest hospital. DO NOT DRINK WATER. Do not administer anything from mouth.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a doctor for treatment advice.

If on skin: Remove contaminated clothing and wash affected areas with soap and water

If inhaled: If exposed, immediately seek fresh air, assist respiration as needed and watch for signs of poisoning. If person is not breathing call an ambulance and give artificial respiration.

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If swallowed, give gastric lavage with 1:500 potassium permanganate solution. Administer 200 ml mineral oil. **Do not** administer animal or vegetable fats or oils. General supportive measures include administration of Vitamin-K to control hemorrhagic manifestation. Treat further symptomatically. Watch for the development of pulmonary oedema.

SECTION 5 - FIRE-FIGHTING MEASURES**Fire and Explosion**

Flash point : Not Applicable

Flammable Limits (% in Air): Not applicable

Auto ignition temperature: Not available

Flammability: Not flammable

Extinguishing agents:

Suffocate flames with sand or dry extinguishing powder. **Do not use water.** For large fires, withdraw from area and let burn.

Unusual Fire, Explosion, and Reactivity hazards:

Dangerous when wet. Dangerous fire hazard and slight explosion hazard when exposed to water. Dust mixtures may ignite and/or explode. When heated to decomposition, it emits toxic fumes of phosphorous and zinc oxides. Irritating oxides of phosphorus may be formed in fires. Contact with water produces flammable gas. Runoff may create fire or explosion hazard.

Fire-fighting:

Remove spectators from surrounding area. Wear self-contained breathing apparatus. Remove container from fire area if possible. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. **If water is used as an extinguishing media, diking is required to keep contaminated water out of all water supplies.**

Personal protective equipment:

Fires involving Phosphine or metal phosphides will produce phosphoric combustion product acid. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

SECTION 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:

Avoid bodily contact.

Wear protective equipment. Keep water and ignition sources away.

Carefully shovel/sweep up and packaged material in clean, dry labeled containers. Move containers away and flush surface with plenty of water. Regard washing as waste. Do NOT let this chemical enter the environment

SECTION 7 - HANDLING AND STORAGE REQUIREMENTS**Handling:**

Handle only in well ventilated areas. Full protective clothing should be used by all those handling the compound. Adequate washing facilities should be available at all times during handling and should be close to the site of handling. Eating, drinking and smoking should be prohibited during handling and before washing after handling. Bait of zinc phosphide should be removed and the area thoroughly cleaned up after the necessary purpose has been fulfilled.

Storage:

Should be stored in clearly labeled, hermetically sealed impermeable containers away from oxidizing agents, acids and living quarters, under lock and key, secure from access by unauthorized persons and children. They must not be stored in damp conditions or be allowed to become damp, as in these circumstances there is both a toxic and fire hazard. No food or drink should be stored in the same compartment. Keep out of reach of children.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

The FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

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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: Do not 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. In the event of exposure, use engineering controls or a NIOSH- approved particulate respirator (N,P,R or HE filter) to keep exposure below the Occupational Exposure Limit.

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

Gloves: Employee must wear chemical resistant (such as nitrile or butyl) gloves to prevent contact with this substance.

Eye protection: Wear tight-fitting chemical goggles or safety glasses with fitted side-shields.

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.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark colored powder
Odor:	Characteristic odour
Vapour Pressure:	Zinc Phosphide 0mm Hg Phosphine gas 40 mm Hg @ 129.4°C
Density:	3.004 ± 0.127
Melting point:	Zinc phosphide >420°C
Freezing Point:	Phosphine Gas -133°C
Solubility in water:	Insoluble in water. Reacts with acidified water to form phosphine gas

SECTION 10 - STABILITY AND REACTIVITY**Storage stability:**

Stable for up to 2 years under normal warehouse and field conditions. Avoid contact with strong acids, strong alkalis and alkaline materials such as lime. Avoid heat and sources of ignition.

Hazardous decomposition:

Product undergoes decomposition at high temperatures and will cause toxic fumes of carbon oxides.

Chemical stability:

Stable when dry but decomposes slowly in moist air. It reacts violently with acids with decomposition to the spontaneously inflammable phosphine gas.

Hazardous:

Hazardous Polymerization will not occur. Reaction with moisture, Polymerization acid will liberate toxic flammable gases.

Condition to avoid: Moist air.

Incompatible:

Avoid contact with water, acids including dilute and oxidizing agents.

Material Hazardous decomposition:

Will react with moist air, water, acids and some other liquid to form toxic product and flammable gases.

SECTION 11 - TOXICOLOGICAL INFORMATION

Ingestion: Fatal if swallowed

Skin Contact: Not absorbed dermally.

Inhalation:

Symptoms of inhalation of phosphine gas includes malaise, ringing in ears, fatigue, nausea & pressure in chest. Exposure can be fatal

Acute Toxicity

Zinc phosphide has high acute oral toxicity. Zinc phosphide ingested orally reacts with water and acid in the stomach and produces phosphine gas, which may account in a large part for observed toxicity.

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Acute oral LD₅₀ (Rat):	25 mg/kg
Acute dermal LD₅₀ (Rat):	>2000 mg/kg
Inhalation:	0.930 mg/l
Eye contact:	Severe irritant
Skin contact:	Moderately irritant

Chronic:

No adverse effect observed due to exposure in humans. However, it has been suggested that chronic exposure to sub-lethal concentrations for extended periods of time may produce toxic symptoms

SECTION 12 - ECOLOGICAL INFORMATION**ECOTOXICOLOGY:****Birds: Highly toxic.**

LC ₅₀ (5-day diet):	Geese and galliforms:	< 10 mg/kg diet
	Other bird species:	< 50 mg/kg diet

Fish: Highly toxicity.

The LC₅₀s fell in a narrow range between 0.3 and 0.8 mg/L, indicative of high toxicity.

Mammalian: High toxicity.

Zinc phosphide is also toxic to non-target mammals when ingested directly. Reported mammalian LD₅₀ range from 5.6 mg/kg in nutria to 93 mg/kg in kit fox.

Bees, earthworms, non-target soil micro-organism

Based on the negligible exposure expected from the representative use of zinc phosphide, the risk to bees, non-target arthropods, earthworms, non-target soil macro- and micro-organisms, non-target plants, and the function of waste water treatment plants was assessed as low.

Fate in Environment

Breakdown in soil and groundwater: Zinc phosphide may be applied as an active ingredient in either bait or a dust. Under average conditions, toxic activity persists for approximately 2 weeks. Soil acidity and moisture tend to accelerate the break down of the compound. Phosphine gas may be liberated as a result of this process.

Breakdown in vegetation: No data are currently available.

SECTION 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. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

Package product wastes:

Emptied containers retain vapour and product residues. Observe all labelled safeguards. TRIPLE RINSE empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container.

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.

SECTION 14 - TRANSPORT INFORMATION

UN NUMBER:	1714
Road Transport ADR/IRD:	
Class:	4.3
Packing group:	I
Shipping name:	Dangerous when wet, N.O.S. (Rodenticide – zinc phosphide)
Maritime Transport IMDG/IMO:	

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Class: 4.3

Packing group: I

Shipping name: Dangerous when wet, N.O.S. (Rodenticide – zinc phosphide)

Considered very toxic.**SECTION 15 - REGULATORY INFORMATION****Symbol:** T**Indication:** Toxic.**Risk phrases:****R20** Harmful by inhalation**R28** Very toxic when swallowed**R32** Contact with acids liberates very toxic gas**R36/38** Irritating to eyes and skin**R43** May cause sensitization by skin contact**R 50** Very toxic to aquatic organisms.**R 54** Toxic to flora.**Safety phrases:****S 2** Keep out of reach children.**S 23** Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer)**S 2425** Avoid contact with skin and eyes.**S 36/37/39** Wear suitable protective clothing, gloves and eye/face protection.**S 41 -** In case of fire and/or explosion do not breathe fumes.**S 45** In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).**S 61** Avoid release to the environment**SECTION 16 - OTHER INFORMATION****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.