

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: RATTOFF[®] ZINC PHOSPHIDE BAIT SACHETS

Recommended Use: **For the control of rats in selected agricultural situations.**
Not suitable for suitable for domestic use. Do not apply on bare ground or in other areas with minimal vegetation where birds are likely to see them. Do not apply if heavy rainfall is imminent. Do not apply by aerial application methods. Do not harvest crops for 14 days after application. Do not graze or cut food for stock for 14 days after application. Do not allow stock or pets to have access to baited areas unless all bait sachets have been recovered or have completely degraded. See product label for further use restrictions as per State or Territory.

Supplier Details

Company: Animal Control Technologies (Australia) Pty Ltd
Address: 46-50 Freight Drive Somerton Vic 3062, Australia
Telephone number: 03 9308 9688 (Monday to Friday, 8:00a.m. – 5:00p.m.)
Emergency telephone number: Poisons Information Centre 13 11 26 (24 hours)

2. HAZARDS IDENTIFICATION

Hazard classification: Hazardous Substance. Non-Dangerous Goods
Risk phrase(s): Flammable: Contact with water or acid liberates extremely flammable, toxic gas.
Dangerous for the Environment: Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
Safety phrase(s): Toxic if swallowed
Keep locked up and out of reach of children.
Keep in a cool, well ventilated place away from water and acids.
Never add water to this product
Wear suitable protective clothing, wear suitable protective gloves
Poisons schedule number: S7

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Name:	CAS Number:	Proportion (w/w):
Zinc Phosphide [Trizinc diphosphide]	1314-84-7	2.5%
Other ingredients not determined to be hazardous	N/A	up to 100%

4. FIRST AID MEASURES

First aid: If poisoning occurs, contact a doctor or Poisons Information Centre. Have this MSDS or the label with you.
Swallowed: Rinse mouth with water. Do not give mouth-to-mouth resuscitation if swallowed. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well ventilated area.
Eye: Hold eyes open and wash with running water for at least 15 minutes.

Skin:	Wash skin for at least 15 minutes with soap and water. Remove contaminated footwear and clothing.
Inhaled:	Remove from site of exposure to fresh air. Apply artificial respiration. Transport patient to a doctor or hospital immediately.
Advice to doctor:	Treat symptomatically. If poisoning occurs, complete bed rest for one to two days is recommended. Poisoning is not chronic and the symptoms should disappear spontaneously. Symptoms of acute poisoning caused by ingestion may include nausea, abdominal pain, excitement, agitation, chills and tightness in chest. Symptoms caused by inhalation may include vomiting, diarrhoea, cyanosis, rapid pulse, fever and shock.

5. FIRE FIGHTING MEASURES

Fire & explosion hazards:	The product is not readily flammable. If there is a build-up of phosphine gas it may ignite when in contact with atmospheric oxygen if the concentration exceeds 1.79%. While kept dry the product is stable for long periods and the fire/explosion risk is minimal.
Suitable extinguishing media:	Use carbon dioxide or extinguishing powder. Do not use water. Move containers from the area if possible and if safe to do so. Fight fire in early stage only if safe to do so.
Hazards from combustion:	Oxides of phosphorous and oxides of zinc and hydrogen phosphide (phosphine) may be formed in a fire situation.
Special protective equipment:	Wear respiratory protection. In well ventilated areas wear full face mask with combination filter, eg ABEK-P2. In enclosed areas wear respirator with independent air supply.

6. ACCIDENTAL RELEASE MEASURES

Spills and Disposal:	Spills of bait sachets or grain bait sachet contents may be cleaned up by sweeping grain bait or sachets into dry containers for disposal. Undamaged sachets may be collected by hand. Contaminated areas may be decontaminated, after removal of grain, by washing with copious quantities of soapy water. Staff involved in clean-up should wear gloves and protective clothing and ensure that there is adequate fresh air ventilation. If in confined spaces and the bait is in contact with moisture or acids that may cause the release of phosphine gas, staff involved in clean up must wear protective full face gas masks and filter cartridges that protect against toxic gas or wear supplied air respirators.
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7. HANDLING AND STORAGE

Precautions for safe handling:	Do not inhale vapour. Avoid contact with eyes and skin. Do not open containers indoors or in confined spaces and allow good ventilation in working areas. When opening the container and using the product, wear elbow-length PVC gloves. Wash hands after use, and after each day's use wash gloves.
Conditions for safe storage:	Store in a locked room away from children, animals, food, feedstuffs, seed and fertilisers and out of direct sunlight. Store away from acids, water and any sources of heat and ignition. Do not store with oxidising agents. Do not store in buildings inhabited by humans or animals. Only open containers in the open air.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National exposure standards:	There is no exposure standard allocated for zinc phosphide bait or zinc phosphide powder. However, the product may evolve phosphine gas which presents a serious toxic risk. The time weighted average (TWA) for phosphine gas is 0.42 mg/cubic metre (\equiv 0.3ppm). The TWA is the average airborne concentration of the material which must not be exceeded when calculated over a normal 8 hour day and a 5 day working week. The short term exposure limit (STEL) for phosphine gas is 1.4 mg/ cubic metre (\equiv 1.0ppm). The STEL is a value which should not be exceeded for more than 15 minutes and which should not be equalled on more than four occasions per day. There should be a period of at least 60 minutes between successive exposures at the STEL.
Biological limit values:	No biological limit allocated.
Engineering controls:	The product formulation increases the stability of zinc phosphide and dilutes its concentration. Use only in a well ventilated area.
Personal protective equipment:	When opening the container and using the product wear PVC gloves. If handling large quantities of bait to fill hoppers wear a full face-piece respirator with combined dust and gas cartridge or supplied air respirator. For help in selecting a suitable mask consult AS/NZS 1715. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and respirator and if rubber wash with detergent and warm water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark grey to black coloured wheat contained in a camouflaged sachet.
Odour	Decomposed to liberate phosphine gas which has a distinct garlic like odour.
pH:	Not available.
Vapour pressure:	Not applicable.
Vapour density:	Not applicable.
Boiling point / range:	Not applicable.
Freezing / melting point:	Not available.
Solubility in water:	Decomposes to liberate toxic and flammable phosphine gas.

10. STABILITY AND REACTIVITY

Chemical stability:	Stable under normal storage and handling conditions.
Incompatible materials:	Exposure to water and acids can cause liberation of toxic highly flammable gasses.
Hazardous decomposition products:	Phosphine gas.
Hazardous reactions:	Phosphine gas is highly flammable and toxic.

11. TOXICOLOGICAL INFORMATION

Acute:

Swallowed:	Poisonous if swallowed. Zinc phosphide will react to stomach acids to liberate phosphine gas which causes toxic effects. Symptoms of ingestion include nausea, abdominal pain, excitement, agitation, chills, vomiting, diarrhoea, cyanosis, rales, restlessness, fever and tightness in chest, Adult deaths have been caused by oral doses of 55-70mg/kg though some individuals have survived acute doses of up to 350-1400 mg/kg if vomiting occurred early and exposure to phosphine was limited.
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Eye:	Avoid contact with eyes. Product is not known to cause irritation to eyes.
Skin:	Avoid contact with skin. Product is not known to cause irritation to the skin.
Inhaled:	Inhalation of phosphine gas may cause vomiting, diarrhoea, cyanosis, rapid pulse, fever and shock. Phosphine gas is rapidly fatal at 2000ppm, Death can occur after ½ - 1h at 400-600ppm, no serious effects after ½ - 1h at levels of 7ppm.

Chronic: The World Health Organisation reports chronic symptoms of phosphine poisoning include tooth ache, weakness, loss of appetite and body weight, and changes to bones causing them to become weak, particularly in the jaw. Chronic toxicity studies in rats have found increased weights and lesions in the liver, brain and kidneys as well as, body weight and hair loss.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Dangerous for the Environment: Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment. Do not contaminate streams, rivers or waterways with the chemical or used containers.
Persistence and degradability:	The sachets and bait grains degrade over time in the environment due to the effects of sunlight and rainfall. Zinc phosphide degrades in atmospheric moisture due to the dissolution of carbon monoxide to form weak carbonic acid to release phosphine gas. The product is expected to degrade completely after rain to leave no environmental residues.
Mobility	Not relevant.
Additional information	Does not bioaccumulate. Low risk of secondary poisoning.

13. DISPOSAL CONSIDERATIONS

Dispose of used containers by crushing and burial below one meter in a disposal pit specifically marked and set up for this purpose, clear of waterways, vegetation and roots. Excess or unused bait must be buried below one meter. Empty containers and product must not be burned.

14. TRANSPORT INFORMATION

This product is not classified as a dangerous good according to the Australian Dangerous Goods Code 6th Edition (1998).

UN number:	Not applicable.
UN proper shipping name:	Not applicable.
Dangerous Goods Class:	Not applicable.
Packing group:	Not applicable.
Hazchem code:	Not applicable.

15. REGULATORY INFORMATION

Poisons schedule number: S7

16. OTHER INFORMATION

Date of Preparation of this MSDS: 30 April 2008.

This Material Safety Data Sheet (MSDS) has been developed using the following references:

- National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition, [NOHSC:2011(2003)]
- Australian Dangerous Goods Code 6th Edition, (1998). Australian Government Publishing Service, Canberra.
- World Health Organisation (1988) Phosphine and selected metal phosphides. WHO; Geneva.

The physical values and properties described in this MSDS are typical values based on scientific literature and material produced to date, and are believed to be reliable. Animal Control Technologies provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. The information is supplied upon the condition that the persons receiving information will make their own determination as to the suitability for their purposes prior to use of this product. Due care should be taken to ensure that the use of this product and its disposal is in compliance with all relevant Federal, State and Local Government regulations.

End of MSDS