



Material Safety Data Sheet

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Infosafe No. 3NU8Y Issue Date : August 2007 ISSUED by NUFARM

Product Name : FUMITOXIN Coated Insecticide Tablets

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name FUMITOXIN Coated Insecticide Tablets
Product Code 1203
Product Type Group 8B Insecticide
Company Name NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)
Address 103-105 Pipe Road Laverton North
Victoria 3026 Australia
Emergency Tel. 1800 033 498 (24hr Australia)
Telephone/Fax Number Tel: +61 3 9282-1000
Fax: +61 3 9282-1001
Recommended Use For control of insect pests of stored products in certain situations as per the Directions for Use table on the label.
Other Information

2. HAZARDS IDENTIFICATION

Hazard Classification HAZARDOUS SUBSTANCE.
DANGEROUS GOODS.
Hazard classification according to the criteria of NOHSC.
Dangerous goods classification according to the Australia Dangerous Goods Code.
Risk Phrase(s) R15/29 Contact with water liberates toxic, extremely flammable gas.
R28 Very toxic if swallowed.
R32 Contact with acids liberates very toxic gas.
Safety Phrase(s) S1/2 Keep locked up and out of reach of children.
S13 Keep away from food, drink and animal feeding stuffs.
S37 Wear suitable gloves.
S38 If insufficient ventilation, wear suitable respiratory equipment.
S43 In case of fire, use dry agents. Never use water.
S45 In case of accident or if you feel unwell seek medical advice immediately
S7 Keep container tightly closed.
S8 Keep container dry.
S9 Keep container in a well ventilated place.
Other Information Poisons Schedule S7 DANGEROUS POISON

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization Solid
Ingredients

<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
Ammonium carbamate		10-30 %
Phosphine (PH ₃) present as Aluminium Phosphide	20859-73-8	330 g/kg
Inert ingredients		Balance

Other Information Fumitoxin contains ammonium carbamate which liberates ammonia and carbon dioxide. These gases are essentially non-flammable and act as an interfering agent to reduce fire hazards. The ammonia also acts as a warning agent.

4. FIRST AID MEASURES

Inhalation Remove victim from exposure - avoid becoming a casualty.
Obtain medical attention urgently.
The rescuer must wear breathing protection. If the victim has any breathing difficulties, oxygen may be given by a trained person. If breathing has stopped, give artificial resuscitation.
Ingestion Accidental ingestion is highly unlikely, the product is in tablet form.
If swallowed do NOT induce vomiting; seek medical advice immediately and show this container or label or contact the Poisons Information Centre on 13 11 26 (Aust). Make every effort to prevent vomit from entering the lungs by careful



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placement of the patient.
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.
CAUTION:
The person assisting the victim must be aware that the victim may exhale phosphine. The assisting person should consider breathing protection.

Skin
If skin contact occurs, remove contaminated clothing and wash skin thoroughly with water.
Remove contaminated clothing and launder before re-use.
CAUTION:
The product reacts with water to form highly toxic phosphine gas. If major contamination exists, decontamination must be done in a manner which keeps people safe from the gas that will be generated.

Eye
If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.

First Aid Facilities
If poisoning occurs, contact a doctor or the Poisons Information Centre (Australia) on 13 11 26.

Advice to Doctor
Exposure cases should be kept at rest in bed and under continuous medical supervision. Persons who inhaled the gas at levels exceeding the TLV should be considered as potential 'exposure cases'. Pulmonary oedema usually results within 24 hrs but can appear several days later. In this case, a physician may administer oxygen at atmospheric pressure. Since positive pressure breathing apparatus requires an effort on the part of the patient, the physician must use this only after evaluation of each case. Absolute rest seems essential. Steroid therapy should be considered on about the fourth day if pulmonary oedema persists or recurs. (1)
Magnesium therapy may reduce the likelihood of a fatal outcome.
Dose: 3g magnesium sulfate during first 24 hrs as a continuous infusion, followed by 6g / 24 hrs for next 3 to 5 days. (2)

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media USE DRY AGENTS ONLY.

Hazards from Combustion Products If involved in a fire, it will emit toxic fumes that may contain phosphine, oxides of phosphorous and possibly nitrogen oxides.

Special Protective Equipment for fire fighters Breathable air apparatus must be worn when fighting a fire in which this product is involved.

Specific Hazards Fire water will react with any spilled tablets to form the highly toxic and flammable phosphine gas. Be especially wary of this possibility during clean-up after a fire has been extinguished.

Hazchem Code 4WE

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal If tablets are spilled, vacate the area and put on breathing apparatus before cleaning up spill. Keep other persons well away from the area. Keep the tablets dry. Collect the tablets in sealed containers for disposal. If tablets have become wet or the circumstances are such that the tablets could be moist, evacuate the area. Keep others well away. If uncertain what to do, get professional advice and/or involve emergency authorities. If it is certain that the area down wind has been totally evacuated, then a final hose down with water (after picking up all the visible product) is advisable to ensure that the area is totally safe. Ensure that water is sprayed from up-wind and that any person doing so is wearing full breathing protection.

7. HANDLING AND STORAGE

Precautions for Safe Handling WARNING: ALWAYS OPEN CONTAINERS OF FUMITOXIN IN THE OPEN AIR BECAUSE, UNDER CERTAIN CONDITIONS, THEY MAY FLASH UPON OPENING.



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When opening, point the top of the container away from face and body and open slowly. Never open a container while in a flammable atmosphere or close to flammable materials.
The containers of tablets MUST be kept dry. In that form, they may be handled using natural ventilation only. Fumitoxin tablets give off phosphine gas on reaction with moisture.
Phosphine gas is toxic and heavier than air. Once the container is opened, breathing protection should be worn when handling the tablets. For effective protection from phosphine gas, wear breathable air apparatus (SCBA). Phosphine smells like decaying fish. If the odour is detected, vacate the area immediately and put on SCBA before re-entry.

Conditions for Safe Storage
Store in the closed, original container in a dry, well ventilated area out of direct sunlight.
Store in a locked enclosure.
Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs.
Do not allow product to become wet or overheated in storage.

Other Information
Always read the label and any attached leaflet before use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards
No exposure standards have been set for this product.
NOHSC has set the following exposure standard for phosphine : TLV (TWA) 0.3 ppm or 0.42 mg/m³, STEL 1 ppm or 1.4 mg/m³.

Engineering Controls
WARNING: The odour threshold of phosphine is 2 ppm which is higher than these exposure limits. Impurities in the product may lower the odour threshold to 0.2 ppm.
DO NOT RELY ON ODOUR of phosphine to determine if the atmosphere is safe. IF ODOUR OF PHOSPHINE IS DETECTED, the concentration of phosphine may be above the exposure limit and the area should be evacuated immediately.
The containers of tablets MUST be kept dry. In that form, they may be handled using natural ventilation only. Fumitoxin tablets give off phosphine gas on reaction with moisture.
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Personal Protective Equipment
Wear cotton overalls buttoned to the neck and wrist, eye protection (chemical goggles preferred), PVC gloves and breathing protection (combined dust/gas cartridge respirator suitable for phosphine or preferably SCBA).
RE-ENTRY PERIOD:
After application, wait until the exposure period has passed, then thoroughly ventilate for the required ventilation period 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.

Hygiene Measures
After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.
After each day's use, wash contaminated clothing and safety equipment.

Requirements Concerning Special Training
NSW regulations require that people who use pesticides in their job or business must have training in the application of the materials.

9. PHYSICAL AND CHEMICAL PROPERTIES



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Product Name : **FUMITOXIN Coated Insecticide Tablets**

Form Solid
Appearance Grey coloured tablets
Vapour Density (Air=1) 1.18
Volatile Component 33% as phosphine on reaction with water.
Flash Point 100°C
Flammability Aluminium phosphide forms a flammable gas on reaction with moisture. The gas may ignite in air, however, materials have been added to release carbon dioxide and ammonia which prevents spontaneous ignition of the gas under normal circumstances.
Auto-Ignition Temperature 100°C for phosphine
Flammable Limits - Lower 1% for phosphine
Flammable Limits - Upper ~100% for phosphine
Other Information Reacts vigorously with water, liberating toxic phosphine gas.

10. STABILITY AND REACTIVITY

Chemical Stability Reacts with atmospheric moisture to form phosphine gas.
Incompatible Materials Avoid contact with water and acids. Phosphine reacts with copper, copper alloys, brass and precious metals such as gold and silver.

11. TOXICOLOGICAL INFORMATION

Inhalation Inhalation of dust or liberated phosphine gas is an extreme hazard to lungs. The inhalation of phosphine causes coughing, dyspnoea and severe pulmonary oedema. The symptoms of poisoning include headache, fatigue, nausea, vomiting, jaundice, paraesthesia, ataxia, intention tremor, diplopia, coma and death.
Ingestion Ingestion is an extreme hazard due to the rapid release of phosphine gas. The symptoms of exposure are described under 'Inhalation'.
Skin May cause burns. Dermal moisture will promote decomposition, phosphine gas will be released.
Eye Dust from tablets or released gas may cause serious damage.
Chronic Effects Exposure leading to chronic effects seems to be rare. However, if exposure was regular, the likely effects include anemia, bronchitis, gastrointestinal disturbances and visual, speech and motor disturbances.
Acute Toxicity - Oral LD50 (rat) 8.7 mg/kg for aluminium phosphide
Acute Toxicity - Inhalation LC50 (rat) (4hr) 0.015 mg/l for phosphine
The lowest recorded toxic dose of phosphine for humans is recorded at 1000 ppm over 5 minutes.

12. ECOLOGICAL INFORMATION

Other Precautions Do not contaminate dams, waterways or sewers with this product or the containers which have held this product.
Acute Toxicity - Fish LC50 (96hr) for rainbow trout is 9.7 µg/l.
Acute Toxicity - Daphnia EC50 (24hr) for daphnia is 0.2 mg/l for phosphine.

13. DISPOSAL CONSIDERATIONS

Product Disposal Ideally, all tablets should be used for the intended purpose. Seek expert advice regarding disposal of unwanted tablets.
Container Disposal Ensure that containers are totally empty before disposal. Crush containers and dispose of in accordance with local regulations. Do not use the containers for any other purpose. Because of its ability to produce highly toxic phosphine gas, never dispose of surplus or part-filled containers in



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tips or other rubbish disposal or by burial, be aware that others, especially children, could locate the container and be exposed to risk.

14. TRANSPORT INFORMATION

U.N. Number 1397
Proper Shipping Name ALUMINIUM PHOSPHIDE
DG Class 4.3
Sub.Risk 6.1
Hazchem Code 4WE
Packaging Method 3.8.4.1
Packing Group I
Storage and Transport Considered dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.
EPG Number 4B3
IERG Number 27

15. REGULATORY INFORMATION

Poisons Schedule S7
Packaging & Labelling DANGEROUS POISON
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING
Hazard Category Very Toxic
AICS (Australia) All of the components in this product are listed on the Australian Inventory of Chemical Substances.

16. OTHER INFORMATION

Contact Person/Point Normal Hours: Mr Volker Maier Phone: (03) 9282 1000
After Hours: Shift Supervisor Phone: 1800 033 498
Literature (1) Encyclopedia of Occupational Health and Safety, ILO Geneva.
References (2) Recognition and Management of Pesticide Poisonings, 5th Ed. USEPA.
Revisions The MSDS was reviewed. Changes made to sections:
Highlighted 1 and 2 - Product Use and Ingredients, as per the label.
8 - Personal Protective Equipment, specifically Re-Entry information.
...End Of MSDS...