

Safety Data Sheet

DATE : 02 : 07 : 2001



REVISION (see box 16)

ISSUE NO : 09

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY

PRODUCT NAME	: PHOSTOXIN
DESCRIPTION	: Green-grey, spherical, ball-like tablets in a canister. The phosphine gas, which is produced when the tablets come into contact with moisture, has a garlic or carbide odour. For use as a vertebrate control agent i.e. for the control of rats, rabbits and moles in outdoor burrows.
COMPANY	: Rentokil Initial UK Ltd, Products Division, Felcourt, East Grinstead, West Sussex, RH19 2JY, England. Telephone: +44 (0)1342 833022 Facsimile: +44 (0)1342 326229 For latest version see, web: www.ri-research.com and click on Technical Information / Product Safety

2. HAZARDS IDENTIFICATION

CLASSIFICATION (SUPPLY - Use) : UK COPR (Control of Pesticides Regulations 1986) / EC Directive 78/631.	DANGER SYMBOL (UK COPR) : (Black on orange background)
T+ - VERY TOXIC : Very toxic if swallowed and by inhalation. X_n - HARMFUL : Harmful in contact with skin. F - HIGHLY FLAMMABLE : Highly flammable.	 
SYMPTOMS AND EFFECTS (see also box 11) :	
Mild exposure by inhalation causes malaise, ringing in the ears, fatigue, nausea and pressure in the chest. Moderate poisoning causes weakness, vomiting, and pains just above the stomach and in the chest, diarrhoea and difficulty in breathing. In severe cases coma, convulsions, pulmonary oedema and death occur.	

3. COMPOSITION / INFORMATION ON INGREDIENT(S)

% w/w	COMMON*/CHEMICAL NAME AND CAS No OF INGREDIENT(S)
56	Aluminium Phosphide / [20859-73-8] NB: Hazard of product is due to the evolution of phosphine / [7803-51-2]

4. FIRST-AID MEASURES (see also "symptoms and effects" in box 2)

INHALATION (Breathing)	: DO NOT enter contaminated atmosphere, otherwise, wear self-contained breathing apparatus. Remove patient to fresh air, keep warm and at rest. Apply supportive measures if necessary, DO NOT give mouth to mouth resuscitation and seek medical attention.
EYE CONTACT	: Rinse affected eye with clean running water, or eyewash solution, for at least 15 minutes holding eyelids well apart. Rinse entire surface and do not allow run-off to contaminate unaffected eye. Seek medical attention.
SKIN CONTACT	: Remove immediately, brush or shake any residues from clothing and skin in a well-ventilated area. Allow clothes to aerate for a number of hours prior to washing. Seek immediate medical attention.
INGESTION (Swallowing)	: Do NOT induce vomiting. If unconscious place in the recovery position and apply supportive measures if necessary. If conscious give patient up to 1 pint of water to drink. Seek medical attention.
EMERGENCY EQUIPMENT SUGGESTED	: Appropriate first-aid equipment should be provided. For the UK this should be in accordance with the Health & Safety (First-Aid) Regulations 1981. See also the Approved Code of Practice "First-aid at Work".
GUIDE TO DOCTOR	: Treatment for suspected poisoning should be symptomatic and supportive. For further information contact the National Poisons Information Service in the UK.

5. FIRE-FIGHTING MEASURES

FIRE EXTINGUISHER - TYPES	: DO NOT USE WATER. If it is absolutely necessary to fight a fire, use sand, carbon dioxide or dry powder extinguishers.
SPECIAL FIRE-FIGHTING PROCEDURES	: Wear self-contained breathing apparatus.
SPECIAL EXPOSURE HAZARDS	: On contact with water, phosphine is evolved. Fires containing phosphine or metal phosphides may produce phosphoric acid.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS (see also box 8)	: Wear suitable coveralls, suitable protective gloves and suitable respiratory protective equipment, ie. a full-face respirator with appropriate gas filter cartridge (which also meets P3 standard for particulates).
PROCEDURE (see also box 13)	: Evacuate spillage area and ensure area is well ventilated. Wearing a suitable respirator fitted with an appropriate gas filter cartridge (which also meets P3 standard for particulates) and personal protective equipment, carefully transfer tablets into a bucket with water and detergent. Afterwards adequately ventilate spillage area. It is advisable to establish that the environment is free from phosphine gas using appropriate gas sampling equipment such as Kitagawa or Draeger detection units. If the spillage occurs outdoors, work upwind from the area. DO NOT contaminate watercourses or ground.

7. HANDLING AND STORAGE (see also box 8)

HANDLING	: At least two operators should be present. Open container outdoors immediately before use and ensure the container is pointing away from you. Read the product label carefully for further instructions about handling and usage.
STORAGE	: Store in original container, tightly closed, in a safe place under lock and key, in a cool, well-ventilated, dry place away from dwellings. Keep out of reach of children and away from food, drink and animal feeding stuffs. USE ALL CONTENTS OF FLASK. DO NOT RE-SEAL. Spontaneous combustion can arise due to a sudden release of phosphine gas if a container having been opened once, is reopened.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION (see also box 7)

OCCUPATIONAL EXPOSURE LIMITS	: OES for phosphine is 0.42 mg/m ³ short-term exposure (15 minute reference period).
ENGINEERING CONTROLS	: Where prevention of exposure is not reasonably practicable, adequate control of exposure should be achieved by engineering controls rather than the provision of personal protective equipment and clothing. Suitable and approved personal protective equipment and clothing may include the following item(s):
EYE PROTECTION	: When opening container point away from face and other people. Wear suitable respiratory protection such as a full-face respirator with appropriate gas filter cartridge (which also meets P3 standard for particulates), or other respiratory equipment offering equivalent protection.
HAND PROTECTION	: Wear suitable hand protection such as synthetic rubber/PVC gloves when handling the contents.
SKIN PROTECTION	: Wear suitable skin protection such as coveralls.
BREATHING PROTECTION	: Wear suitable respiratory protection such as a full-face respirator with appropriate gas filter cartridge (which also meets P3 standard for particulates), or other respiratory equipment offering equivalent protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOUR	: Green-grey, spherical, ball-like tablets with a garlic/ammoniacal odour.		
FLASH POINT	: Not applicable.	SOLUBILITY IN WATER	: Product : Not determined. Phosphine gas : 26 ml/100 ml (17°C).
FLAMMABILITY	: Highly flammable gas released on contact with moisture.	SOLUBILITY IN FAT	: Phosphine gas : Insoluble.
AUTOFLAMMABILITY	: Phosphine gas : ca. 100°C.	PARTITION COEFFICIENT	: Not applicable.
VAPOUR PRESSURE	: Phosphine gas : 24.5 kPa (30°C)	BOILING POINT/RANGE	: Not applicable.
RELATIVE DENSITY	: Product : 1.8 g / cm ³ (Bulk) Phosphine gas : 1.17 (air = 1.0)	MELTING POINT/RANGE	: Product : >1700°C
		pH	: Not applicable.
OXIDISING PROPERTIES	: Phosphine gas is corrosive to metals, especially with copper or copper containing alloys.		
EXPLOSIVE PROPERTIES	: Possibility of spontaneous combustion if excessive amounts of tablets come in contact with water due to liberation of phosphine. Lower explosion limit : 1.8 % v/v in air (Phosphine). Contact with diluted strong acids can cause fire and an explosion hazard due to violent reaction. Run-off to sewers may create a fire or an explosion hazard.		
OTHER DATA	: Pure phosphine gas has an autoignition temperature of approximately 100°C but Phostoxin, because of its composition, will control the hydrolysis of aluminium phosphide, and thus phosphine gas development. This means that even under extremely high humidity and temperature, the danger of spontaneous ignition of the gas is reduced.		

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID	: Avoid extreme heat and damp. DO NOT use in wet weather (contact with water liberates phosphine gas).
MATERIALS TO AVOID	: Avoid contact with water, oxidising agents and diluted strong acids. Phosphine may corrode metals such as gold, silver and copper. Photographic film and some inorganic pigments are also sensitive to phosphine.
HAZARDOUS BREAKDOWN PRODUCTS	: On contact with water, phosphine gas is evolved. Phosphoric acid may be generated in the event of a fire.

11. TOXICOLOGICAL INFORMATION (see also box 2)

INHALATION	: Very toxic by inhalation. Contact with water liberates very toxic, highly flammable gas which is irritating to the respiratory system. Phosphine gas : Human immediate lethal dose : 2800 mg/m ³ ; LC ₅₀ Rat : >15.5 mg/m ³ (6 hr) ; LC ₅₀ Male Rat : 15.4 mg/m ³ (4 hr) ; LC ₅₀ Female Rat : 252.4 mg/m ³ (1 hr) ; LC ₅₀ Male Rat : 204 mg/m ³ (1hr).
INGESTION	: Very toxic if swallowed. Aluminium phosphide : Fatal dose for a 70 kg adult human : 0.5 g ; LD ₅₀ oral (rat) : 8.7 mg/kg ; LD ₅₀ oral (mice) : 14.8 mg/kg. Phosphine directly inhibits cytochrome oxidase in an action similar to that of cyanide. Symptoms of poisoning include weakness, vomiting, pains in the chest and stomach, diarrhoea and difficulty breathing.
SKIN CONTACT	: Harmful in contact with skin. Aluminium phosphide : LD ₅₀ (dermal) : 500 - 1000 mg/kg
EYE CONTACT	: May cause irritation to eyes. Contact with water liberates very toxic, highly flammable gas which is irritating to the eyes.
CHRONIC EFFECTS (DUE TO LONG/REPEATED EXPOSURE)	: None known.

12. ECOLOGICAL INFORMATION

GENERAL INFORMATION	: DO NOT contaminate watercourses or ground.
ECOTOXICITY DATA	: The full ecotoxicological profile of this product has not been evaluated. Do not contaminate the environment. Phosphine gas : LC ₅₀ (96 hr) : Rainbow Trout : 0.0022 mg/l. Phosphine decomposes in the atmosphere within 5 - 28 hours.
ENVIRONMENTAL CONSIDERATIONS	: The phosphine gas, that is produced when this product comes into contact with moisture, is considered to be dangerous to fish and other aquatic life. Thus, every care must be taken to avoid its release and the subsequent contamination of the aquatic environment. Care must be taken when using Phostoxin, in order to avoid gassing non-target animals that may be present at the treatment site.

13. DISPOSAL CONSIDERATIONS

DISPOSAL OF WASTE	: Waste should be disposed of in accordance with local, State or National requirements.
DISPOSAL OF CONTAINERS	: Empty containers should be disposed of in accordance with local, State or National requirements. DO NOT rinse empty containers with water. Fill with dry earth / sand and puncture in several places. Do not keep inside buildings. Do not heap spent packets or loose phosphine residues together for storage, or close them in any receptacle as this may result in a fire or explosion. For further information, refer to the relevant code of practice.
UK SPECIAL WASTE REGULATIONS, 1996	: <u>Hazard Code</u> : H6 - Toxic, H3A - Highly Flammable. <u>Components making the waste special and their concentrations</u> : % w/w Aluminium Phosphide 56
NOTE FOR DISPOSAL	: Disposal should be in accordance with local, State or National requirements. For further advice about disposal, in the UK, contact the local office of the Environment Agency (England and Wales) or Scottish Environment Protection Agency. Local rate from anywhere in the UK: 0645 333111.

14. TRANSPORT INFORMATION (International unless otherwise indicated)

<u>UN NUMBER</u> : 1397	<u>UK HAZCHEM EAC</u> : Not assigned - see special provisions under each mode of transport.	<u>ADR HIN</u> : Not assigned - see special provisions under each mode of transport.	<u>ADR SIN</u> : 1397
<u>UK CDGRoad Transport Category</u> : 1	<u>Tremcard Reference No.</u> : <u>CEFIC TEC (R)</u> - 43G15	<u>IMDG EMS</u> : 4.3-02	<u>IMDG MFAG Table No.</u> : 205
<u>UK CDGCPL2 CARRIAGE</u> : LIMITED QUANTITY EXEMPTIONS : SPECIAL REQUIREMENTS : LABELS :	Class 4.3, Packing group I, Aluminium Phosphide. None. Carriage in bulk or in tanks is not permitted. Accordingly, no emergency action code or hazard identification number has been allocated. DANGEROUS WHEN WET, TOXIC		
<u>IMDG (SEA) CARRIAGE</u> : LIMITED QUANTITY EXEMPTIONS : SPECIAL REQUIREMENTS : LABELS :	Class 4.3, Packing group I, Aluminium Phosphide. None. Not required. DANGEROUS WHEN WET, TOXIC		
<u>ADR (ROAD) CARRIAGE</u> : LIMITED QUANTITY EXEMPTIONS : SPECIAL REQUIREMENTS : LABELS :	Class 4.3, item 18°(a) None. Carriage in bulk or in tanks is not permitted. Accordingly, no emergency action code or hazard identification number has been allocated. DANGEROUS WHEN WET, TOXIC		

15. REGULATORY INFORMATION

INDICATION OF DANGER	HEALTH AND SAFETY INFORMATION (see also box 2)
T+ - VERY TOXIC	: Very toxic if swallowed and by inhalation.
X_n - HARMFUL	: Harmful in contact with skin.
F - HIGHLY FLAMMABLE	: Highly flammable.
STATUTORY PHRASES :	
For use only in rat, rabbit and mole control by persons instructed or trained in the use of aluminium phosphide. Operators must wear suitable protective clothing (coveralls), suitable protective gloves and suitable respiratory protective equipment* when opening container, handling and placing the tablets *(i.e. full-face respirator with appropriate gas filter cartridge (which also meets P3 standard for particulates) or RPE offering equivalent protection. To be used only by an operator trained or instructed in the use of aluminium phosphide and familiar with the precautionary measures to be observed. See HSE guidance note CS22: fumigation. Do not use in wet weather. Do not treat burrows less than 3 metres (10 feet) from any building occupied by man or animals. Search for rodent bodies and dispose of safely (e.g. burn or bury). Do not dispose of in refuse sacks or on open rubbish tips. Tablets should never be placed or allowed to remain on the ground surface. Do not re-use container for any purpose. Dangerous to fish or other aquatic life. Do not use adjacent to watercourses. Do not contaminate surface waters or ditches with chemical or used container. Badgers are protected animals : Setts must not be gassed. Aluminium phosphide must not be used if there are active badger setts/fox earths in the treatment area. Care must be taken to avoid gassing non-target animals. Badger and polecat are protected under the Wildlife and Countryside Act 1981 and may use rabbit burrows. Avoid using Phostoxin in burrows or warren systems where there is evidence of current badger or fox activity, or where such systems may be connected to an active sett or earth. Reptiles and the natterjack toad are also protected under the Wildlife and Countryside Act 1981; if these are likely to be present in burrows, consult English Nature, Scottish Heritage and the Countryside Commission for Wales, as appropriate before using Phostoxin. Most bird species are protected under the Wildlife and Countryside Act 1981. Do not use Phostoxin in areas and at times of year when adult or juvenile puffins, shearwaters or petrels are occupying burrows; do not use in burrows that may be occupied by other hole-nesting birds such as wheat-ears or shelduck. READ ALL PRECAUTIONS BEFORE USE.	
LEGISLATION :	This product is approved in the UK under the Control of Pesticides Regulations (COPR) 1986 for use as directed. MAFF 09315. This product is classified in the UK under the Carriage of Dangerous Goods (Classification, Packaging and Labelling) and Use of Transportable Pressure Receptacles CDGCP2 Regulations 1996, as dangerous for carriage.

16. OTHER INFORMATION

The information given on this Safety Data Sheet (SDS) does not constitute an assessment in accordance with the Control of Substances Hazardous to Health (Amendment) (COSHH) Regulations 1999. Changes have been made to the content of boxes 1, 4, 7, 15 & 16 (as indicated by the thick lines on the left-hand side of the boxes) compared with issue 08. Aluminium phosphide is a Part I Schedule I Poison and its sale and supply is controlled by legislation.
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PHOSTOXIN - COPR

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Before using any product, ensure that you read and understand its label. The information contained in this safety data sheet is, to the best of our knowledge and belief, accurate and reliable at the time of publication. The information relates only to the specific material designated in this safety data sheet and may not be valid for such material if it is used in combination with any other material(s) or any other use than that specified herein. Rentokil Initial UK Ltd is not liable for the use of this product for any other purpose than that described in this safety data sheet. This does not affect your statutory rights. It is the user's responsibility to satisfy him/herself as to the suitability in completeness of such information for his/her own particular use.
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