

# Products




# Safety Data Sheet

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**REVISION (see box 16)**

Issue : 10 01 : 07 : 2004

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY	
PRODUCT NAME	<b>PHOSTOXIN</b>
DESCRIPTION	Green-grey, round tablets in a canister. The phosphine gas, which is produced when the tablets come into contact with moisture, has a garlic-like odour. For professional use as a vertebrate control agent in the control of rats, rabbits and moles in outdoor burrows.
COMPANY	Rentokil Initial Supplies, Head office: Felcourt, East Grinstead, West Sussex. RH19 2JY. United Kingdom. Telephone: +44 (0)1342 833022 Facsimile: +44 (0)1342 326229

2 HAZARD IDENTIFICATION	
CLASSIFICATION AND DANGER SYMBOL (SUPPLY – USE) : IN COMPLIANCE WITH EC DIRECTIVE 1999/45.	
<b>F Highly Flammable</b>	R15/29 Contact with water liberates toxic, extremely flammable gas.
<b>T+ Very Toxic</b>	R26/28 Very toxic by inhalation and if swallowed. R32 Contact with acid liberates very toxic gas. R21 Harmful in contact with skin.
<b>N Dangerous for the Environment</b>	R50 Very toxic to aquatic organisms.
	  
	<b>VERY TOXIC</b> <b>HIGHLY FLAMMABLE</b> <b>DANGEROUS FOR THE ENVIRONMENT</b>

**ADVERSE PHYSICAL, CHEMICAL, SIGNIFICANT HUMAN HEALTH AND ENVIRONMENTAL EFFECTS (SEE ALSO BOX 11):**  
 Contact with water liberates toxic, extremely flammable gas. Contact with acid liberates very toxic gas. Spontaneous combustion can arise due to sudden release of phosphine gas if a flask, having been opened once, is then re-opened.  
 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.  
 Adverse effects on the environment are unlikely, provided that the product is used as intended.

3 COMPOSITION / INFORMATION ON INGREDIENTS (SEE ALSO BOX 16)		
% w/w	COMMON*/CHEMICAL NAME, ELINCS/EINECS AND CAS OF INGREDIENTS	EC 1999/45 CLASSIFICATION
56%	Aluminium phosphide EINECS : Not known CAS : 20859-73-8 NB: The hazard from this product is caused by the evolution of phosphine gas on contact with atmospheric moisture.	F : R15/29 T+ : R26/28 N : R50
33%	Phosphine / hydrogen phosphide EINECS : Not known CAS : 7803-51-2	F : R17, R18 T+ : R26, R37

## PHOSTOXIN

<b>4 FIRST-AID MEASURES (SEE ALSO "ADVERSE EFFECTS" IN BOX 2)</b>	
<b>INHALATION</b>	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. Seek medical attention.
<b>EYE CONTACT</b>	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.
<b>SKIN CONTACT</b>	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 medical attention.
<b>INGESTION (SWALLOWING)</b>	Do NOT induce vomiting. If unconscious place in the recovery position and apply supportive measures if necessary. If conscious give patient up to ½ litre or 1 pint of water to drink. Seek medical attention.
<b>EMERGENCY EQUIPMENT SUGGESTED</b>	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".
<b>NOTE TO DOCTOR</b>	Further information on all Rentokil Initial formulations is lodged with the National Poisons Information Service in the UK. Telephone +44 (0) 870 600 6266 - 24 hours.

<b>5 FIRE FIGHTING MEASURES</b>	
<b>FIRE EXTINGUISHER TYPE</b>	DO NOT USE WATER. If it is absolutely necessary to fight a fire, use sand, carbon dioxide or dry powder extinguishers.
<b>SPECIAL FIRE-FIGHTING PROCEDURES</b>	Wear self-contained breathing apparatus.
<b>SPECIAL EXPOSURE HAZARDS</b>	On contact with water, phosphine gas is evolved. Fires containing phosphine or metal phosphides may produce phosphoric acid.

<b>6 ACCIDENTAL RELEASE MEASURES</b>	
<b>PERSONAL PRECAUTIONS (See also box 8)</b>	Wear suitable coveralls, suitable protective gloves and suitable respiratory protective equipment, i.e. a full-face respirator with appropriate gas filter cartridge (which also meet P3 standard for particulates).
<b>ENVIRONMENTAL PRECAUTIONS</b>	DO NOT contaminate watercourses or ground.
<b>CLEAN-UP PROCEDURE (See also box 13)</b>	Evacuate the spillage area and ensure area is well ventilated. Wear 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 containing 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 measurement units. If the spillage occurs outdoors, work upwind from the area.

<b>7 HANDLING AND STORAGE (SEE ALSO BOX 8)</b>	
<b>HANDLING</b>	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.
<b>STORAGE</b>	Store in original container, tightly closed, in a safe place under lock and key, in a cool, dry, well-ventilated place away from dwellings. Keep out of the 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 then re-opened.

<b>8 EXPOSURE CONTROLS/PERSONAL PROTECTION</b>	
<b>EXPOSURE STANDARD - DIRECTIVE EC/98/24 (1<sup>ST</sup> IOELV DIRECTIVE)</b>	OES for phosphine is 0.42 mg/m <sup>3</sup> short-term exposure (15 minute reference period).
<b>ENGINEERING CONTROLS</b>	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. More specific details cannot be given without carrying out a full risk assessment for each and every use scenario. Suitable and approved personal protective equipment and clothing may include the following item(s):
<b>EYE PROTECTION</b>	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 meet P3 standard for particulates), or other respiratory equipment offering equivalent protection.
<b>HAND PROTECTION</b>	Wear suitable hand protection such as synthetic rubber / PVC gloves when handling the contents.
<b>SKIN PROTECTION</b>	Wear suitable skin protection such as coveralls.
<b>BREATHING PROTECTION</b>	Wear suitable respiratory protection such as a full-face respirator with appropriate gas filter cartridge (which also meet P3 standard for particulates), or other respiratory equipment offering equivalent protection.
<b>ENVIRONMENTAL EXPOSURE CONTROLS</b>	Product should be used in accordance with instructions given on the label and HSE guidance documents: CS22 : Fumigation and Pesticides: Code Of Practice for the Safe Use of Pesticides on Farms and Holdings. Any spillage should be dealt with as a priority in order that contamination of watercourses or ground is avoided.

## PHOSTOXIN

## 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE &amp; ODOUR</b>	Green-grey, round tablets in a canister, phosphine gas has a garlic-like odour.		
<b>pH</b>	Not applicable.	<b>SOLUBILITY IN WATER</b>	Product decomposes on contact with water. Phosphine: 26 mL / 100 mL at 17°C
<b>DENSITY</b>	Not applicable.	<b>SOLUBILITY IN FAT</b>	Not determined.
<b>FLASH POINT</b>	Not applicable.	<b>EXPLOSIVE PROPERTIES</b>	LEL : 1.8% v/v ; UEL: not tested (phosphine)
<b>FLAMMABILITY</b>	Phosphine is flammable.	<b>COMBUSTIBILITY</b>	Phosphine is spontaneously combustible at concentrations over 1.8% (25 mg/m <sup>3</sup> )
<b>AUTOFLAMMABILITY</b>	Not applicable, contains additives to prevent self-ignition.	<b>OXIDISING PROPERTIES</b>	Not determined.
<b>BOILING POINT/RANGE</b>	Phosphine: -87°C	<b>MELTING POINT/RANGE</b>	> 500°C
<b>VAPOUR DENSITY</b>	Not determined.	<b>EVAPORATION RATE</b>	Not applicable.
<b>VAPOUR PRESSURE</b>	34.6 bar at 20°C (phosphine)	<b>PARTITION COEFFICIENT</b>	Not applicable.
<b>VISCOSITY</b>	Not applicable.		
<b>OTHER DATA</b>	The composition of Phostoxin is formulated to control the hydrolysis of aluminium phosphide to phosphine. This means that even under extremely high humidity and temperature the danger of spontaneous ignition of phosphine is reduced. Phosphine is considered to be corrosive to copper, copper alloys, silver and gold but non-corrosive to aluminium.		

## 10 STABILITY AND REACTIVITY

<b>CONDITIONS TO AVOID</b>	Avoid extreme heat and damp. DO NOT use in wet weather (contact with water liberates phosphine gas).
<b>MATERIALS TO AVOID</b>	Avoid contact with water, oxidising agents and dilute strong acids. Phosphine may corrode metals such as copper, copper alloys, gold and silver. Photographic film and some inorganic pigments are also sensitive to phosphine.
<b>HAZARDOUS BREAKDOWN PRODUCTS</b>	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)

<b>ACUTE TOXICITY</b>	<b>ORAL</b>	For (aluminium phosphide) : LD <sub>50</sub> (rat) : 8.7 mg/kg. For (Phostoxin) : LD <sub>50</sub> (rat) : 11.5 mg/kg.
	<b>INHALATION</b>	For (aluminium phosphide) : LC <sub>50</sub> (rat) (4hr / inhalative) : 11 ppm = 0.015 mg/L = 15.5 mg/m <sup>3</sup> . For (phosphine gas) : LC <sub>50</sub> (rat) (6hr) : >15.5 mg/m <sup>3</sup> .
	<b>DERMAL</b>	For (Phostoxin) : LD <sub>50</sub> : 500 - 1000 mg/kg.
<b>CORROSIVITY/ IRRITATION</b>	<b>SKIN</b>	Not classifiable as a skin irritant.
	<b>EYES</b>	Not classifiable as an eye irritant.
	<b>RESPIRATORY TRACT</b>	Not determined.
<b>SENSITISATION</b>	<b>SKIN</b>	Contains no known skin sensitisers.
	<b>RESPIRATORY</b>	Contains no known respiratory sensitisers.
<b>REPEAT-DOSE TOXICITY</b>		Product does not contain any components known to have any effects relating to repeated-dose toxicity.
<b>MUTAGENICITY</b>		Product does not contain any components known to have a mutagenic effect.
<b>CARCINOGENICITY</b>		Product does not contain any components known to have a carcinogenic effect.
<b>REPRODUCTIVE TOXICITY</b>	<b>FERTILITY DEVELOPMENT</b>	Product does not contain any components known to have effects on fertility. Product does not contain any components known to be toxic to the reproductive system.
<b>OTHER INFORMATION</b>		There is no effective treatment for phosphine poisoning. Ingestion of less than one sixth of a 3 g tablet (0.5g) is a fatal dose for a 70 kg adult human. Phosphine directly inhibits cytochrome oxidase in an action similar to that of cyanide. Symptoms of poisoning include:- epigastric burning, vomiting, thirst, cardiovascular collapse, acidosis and hypokalaemia.

## 12 ECOLOGICAL INFORMATION



<b>GENERAL INFORMATION</b>	The full ecotoxicological profile of this product has not been evaluated. Do not contaminate the environment.
<b>ECOTOXICITY DATA</b>	For (Phostoxin) : LC <sub>50</sub> (Rainbow trout)(96hr): 0.0097ppm EC <sub>50</sub> ( <i>Daphnia magna</i> )(24hr): 0.2 mg/L.
<b>MOBILITY (of appropriate constituents)</b>	Product decomposes to phosphine gas and inert powder residues.
<b>PERSISTENCE &amp; DEGRADABILITY (of appropriate constituents)</b>	Phosphine decomposes in the atmosphere within 5 - 28 hours.
<b>BIOACCUMULATIVE POTENTIAL (of appropriate constituents)</b>	Unlikely to bioaccumulate.
<b>ENVIRONMENTAL CONSIDERATIONS</b>	DO NOT contaminate watercourses or ground. This product is classified as very toxic to aquatic organisms. 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.
<b>OTHER ADVERSE EFFECTS</b>	None.

## PHOSTOXIN




## 13 DISPOSAL CONSIDERATIONS

<b>DISPOSAL OF WASTE</b>	Waste should be disposed of in accordance with local, State or National requirements.
<b>DISPOSAL OF CONTAINERS:</b>	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 phostoxin 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.
<b>CLASSIFICATION OF INGREDIENTS</b> (Council Directive 91/689/EC, Commission Decision 2000/532/EC (amended) Commission Decision 2001/118/EC))	<u>Hazard Code:</u> H3A(v) - Highly Flammable, H6 - Toxic, H12 - Product of toxic gases in contact with water, air or an acid, H14 - Ecotoxic.
<b>NOTE FOR DISPOSAL</b>	<u>Components making the waste hazardous Concentrations (%):</u> Aluminium phosphide 56%
	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: 0845 9333111.

## 14 TRANSPORT INFORMATION (INTERNATIONAL UNLESS OTHERWISE INDICATED)

<b>UN No.</b>	UN1397	<b>TREMCARD REFERENCE NO.</b>	CEFIC TEC (R)- 43GWT2-1	<b>RIS CODE</b>
<b>TRANSPORT CATEGORY</b>	1	<b>UK HAZCHEM EAC</b>	Not applicable, aluminium phosphide is not allowed to be carried in tanks or bulk.	FP04 - 10 x 90g FP10 - 90g flask
<b>ADR 2003 (INTERNATIONAL ROAD) PROPER SHIPPING NAME LIMITED QUANTITIES SPECIAL REQUIREMENTS</b>	<b>CLASS</b> 4.3 ALUMINIUM PHOSPHIDE, MIXTURE None. Not required.	<b>ADR HIN</b>	Not applicable, aluminium phosphide is not allowed to be carried in tanks or bulk.	<b>LABELS</b>  
<b>IMDG 2002 (SEA) PROPER SHIPPING NAME LIMITED QUANTITIES SPECIAL REQUIREMENTS</b>	<b>CLASS</b> 4.3 ALUMINIUM PHOSPHIDE, MIXTURE None. Not required.	<b>IMDG EMS</b>	F-G, S-N PACKING GROUP I	
<b>NOTE FOR TRANSPORT</b>	Local, State or National requirements may apply to the carriage of this product			

## 15 REGULATORY INFORMATION (HEALTH AND SAFETY INFORMATION (SEE ALSO BOX 2))

<b>HAZARD SYMBOLS</b>			
<b>INDICATION OF DANGER</b>	<b>F - Highly Flammable</b>	<b>T+ - Very Toxic</b>	<b>N - Dangerous for the Environment</b>
<b>RISK PHRASES</b>	<b>R15/29</b> : Contact with water liberates toxic, extremely flammable gas. <b>R32</b> : Very toxic by inhalation and if swallowed. <b>R26/28</b> : Contact with acid liberates very toxic gas. <b>R21</b> : Harmful in contact with skin.		
<b>SAFETY PHRASES</b>	<b>R50</b> : Very toxic to aquatic organisms. <b>S3/9/49</b> : Keep only in the original container in a cool well-ventilated place. <b>S7/8</b> : Keep container tightly closed and dry. <b>S22</b> : Do not breathe dust. <b>S30</b> : Never add water to this product. <b>S36/37</b> : Wear suitable protective clothing and gloves. <b>S43</b> : In case of fire, use dry sand, powder or carbon dioxide extinguishers. Never use water. <b>S45</b> : In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).		
<b>LEGISLATION</b>	Labelling is according to UK regulations implementing the EC Directive 1999/45. Additional labelling requirements may be necessary in accordance with local legislation. Specific legislation used within this Safety Data Sheet is listed in the above boxes.		

## 16 OTHER INFORMATION and indication of revisions

The information given on this Safety Data Sheet (SDS) <b>does not</b> constitute an assessment in accordance with Control of Substances Hazardous to Health (COSHH) Regulations 2002, in the UK. <b>Before using any product, ensure that you read and understand its label.</b> Outside the UK, the registration of this product may be necessary before use and any additional local requirements must be observed at all times.	
<b>REVISIONS</b>	Changes have been made to the content of boxes 1, 2, 3, 4, 6, 8, 9, 10, 11, 12, 13, 14, 15 & 16 (as indicated by the thick lines on the left-hand side of the boxes) compared with issue 09.
<b>RISK PHRASE TEXT (from box 3)</b>	<b>R15/29</b> : Contact with water liberates toxic, extremely flammable gas. <b>R17</b> : Spontaneously flammable in air. <b>R18</b> : In use may from flammable / explosive vapour-air mixture. <b>R26</b> : Very toxic by inhalation. <b>R26/28</b> : Very toxic by inhalation and if swallowed. <b>R37</b> : Irritating to respiratory system. <b>R50</b> : Very toxic to aquatic organisms.

## PHOSTOXIN

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**Before using any product, ensure that you read and understand its label.**

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