

# Safety Data Sheet

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**REVISION (see box 16)**

Issue : 14 27 : 01 : 2010

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY		
<b>Product Name</b>	<b>PHOSTOXIN</b>	<b>MAFF 09315</b>
<b>Description</b>	A vertebrate control agent for professional use. Green-grey, spherical tablets supplied in an aluminium flask. The phosphine gas, which is produced when the tablets come into contact with moisture, has a garlic or carbide odour.	
<b>Company</b>	Rentokil Initial Supplies, Liverpool, L33 7SR. Product advice line: +44 (0)151 548 5050 Emergency line: +44 (0)1293 858 000 E-mail: <a href="mailto:sds@rentokil.com">sds@rentokil.com</a>	
2 HAZARD IDENTIFICATION		
<b>Classification (Supply – Use) : In compliance with EC Directive 1999/45.</b>		
<b>F Highly Flammable</b>	R15/29	Contact with water liberates toxic, extremely flammable gas.
<b>T+ Very Toxic</b>	R26/28 R32	Very toxic by inhalation and if swallowed. Contact with acids liberates very toxic gas.
<b>N Dangerous for the environment</b>	R21 R50	Harmful in contact with skin. Very toxic to aquatic organisms.
<b>Adverse Physical, Chemical, Significant Human Health and Environmental Effects (See also box 11):</b>		
Contact with water liberates toxic, extremely flammable gas. Contact with acids 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)		
<b>% w/w</b>	<b>Common*/Chemical Name, ELINCS/EINECS &amp; CAS No. of Ingredients</b>	<b>EC 1999/45 Classification</b>
56	Aluminium phosphide* EINECS : 244-088-0 CAS : 20859-73-8	F : R15/29 T+ : R28, R32 N : R50
>25.0 ≤50.0	Ammonium carbamate* EINECS : 214-185-2 CAS : 1111-78-0	X <sub>n</sub> : R22
N.B. The hazard from this product is caused by the evolution of phosphine gas on contact with atmospheric moisture or gastric fluids.		
>25.0 ≤50.0	Phosphine*/hydrogen phosphide EINECS : 232-260-8 CAS : 7803-51-2	F+ : R12, R17 T+ : R26 C : R34 N : R50
>2.5 ≤10.0	Ammonia* EINECS : 231-635-3 CAS : 7664-41-7	C : R34 N : R50
4 FIRST-AID MEASURES (SEE ALSO “ADVERSE EFFECTS” IN BOX 2)		
<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.	

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5 FIRE FIGHTING MEASURES	
<b>Fire Extinguisher Type</b>	Use carbon dioxide, sand or dry powder extinguishers. DO NOT USE WATER.
<b>Special Fire-Fighting Procedures</b>	Wear suitable personal protective equipment and self-contained breathing apparatus.
<b>Special Exposure Hazards</b>	Fires containing phosphine or metal phosphides may produce phosphoric acid and phosphorous oxides.

6 ACCIDENTAL RELEASE MEASURES	
<b>Personal Precautions (See also box 8)</b>	Wear suitable personal protective equipment and self-contained breathing apparatus (SCBA). All protective clothing should be washed immediately after use and SCBA must be regularly renewed.
<b>Environmental Precautions</b>	This product is classified as dangerous for the environment. Keep away from drains, surface and ground water, and soil. Notify authorities if product enters sewers or public waters.
<b>Clean-up Procedure (See also box 13)</b>	Evacuate the spillage area and ensure the area is well-ventilated. Wear suitable personal protective equipment and SCBA. Prevent dispersion. Clean up the remainder carefully. Do not use water for cleaning. The area should be kept secure and aerated until checked for zero gas concentration using appropriate gas sampling equipment. Remove as hazardous waste, according to national or local legislation.

7 HANDLING AND STORAGE (SEE ALSO BOX 8)	
<b>Handling</b>	Open the flask outdoors immediately before use and ensure it is pointing away from you. Read the product label carefully for further instructions about handling and usage.
<b>Storage</b>	Store in original flask in a cool, dry, ventilated place out of the reach of children and away from food, drink and animal feeding stuffs. USE ALL THE CONTENTS OF THE FLASK. DO NOT RE-SEAL. Spontaneous combustion can arise due to a sudden release of phosphine gas if a flask having been opened once, is then re-opened.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION	
<b>Exposure Standard - Directive EC/98/24 (1<sup>st</sup> IOELV Directive)</b>	Workplace Exposure Limit (WEL) for phosphine is 0.14 mg/m <sup>3</sup> long-term exposure (8 hour Time Weighted Average) and 0.28 mg/m <sup>3</sup> short-term exposure (15 minute reference period).
<b>Engineering Controls</b>	Where exposure may occur, engineering controls, rather than the provision of Personal Protective Equipment (PPE) should be employed. On completion of a risk assessment, the following PPE may be required:
<b>Eye Protection</b>	When opening the flask, point away from face and other people. Wear a full-face respirator with appropriate gas filter cartridge (which also meets P3 standard for particulates), or other respiratory equipment offering equivalent protection.
<b>Hand Protection</b>	Suitable hand protection such as synthetic rubber/PVC gloves.
<b>Skin Protection</b>	Suitable skin protection such as coveralls.
<b>Breathing Protection</b>	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>	Use only in accordance with instructions given. Any spillage should be dealt with as a priority in order that contamination of watercourses is avoided.

9 PHYSICAL AND CHEMICAL PROPERTIES			
<b>Appearance and Odour</b>	Grey, spherical, tablets. The phosphine gas has a garlic or carbide odour.		
<b>pH</b>	Not applicable.	<b>Solubility in Water</b>	Product decomposes on contact with water. Phosphine: 26mL/100mL at 17°C.
<b>Density</b>	Aluminium phosphide: 2.3 g/cm <sup>3</sup> Phosphine: SG: 1.17	<b>Solubility in Other Solvents</b>	Phosphine: Insoluble.
<b>Flash Point</b>	Not applicable.	<b>Explosive Properties</b>	Phosphine: LEL: 1.8% vol. UEL: Not available.
<b>Flammability</b>	Highly flammable.	<b>Combustibility</b>	Phosphine is spontaneously combustible at concentrations over 1.8%.
<b>Boiling Point/Range</b>	Phosphine: -87°C Aluminium phosphide: >500°C	<b>Oxidising Properties</b>	None.
<b>Vapour Density</b>	Not determined.	<b>Evaporation Rate</b>	Not applicable.
<b>Vapour Pressure</b>	Phosphine: 34.6 bar at 20°C.	<b>Partition Coefficient</b>	Not applicable.
<b>Viscosity</b>	Not applicable.	<b>Other Data</b>	Phosphine is corrosive to copper, copper alloys, silver and gold. Non-corrosive to aluminium. Product contains additives to prevent self-ignition.

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<b>10 STABILITY AND REACTIVITY</b>	
<b>Conditions to avoid</b>	Avoid extremes of temperature, e.g. below 0°C and above 40°C and extreme damp. DO NOT use in wet weather as contact with water liberates phosphine gas.
<b>Materials to avoid</b>	Avoid contact with water and dilute strong acids. Phosphine gas is considered to be corrosive to copper, copper alloys, silver and gold.
<b>Hazardous Breakdown Products</b>	Fires containing phosphine or metal phosphides may produce phosphoric acid and phosphorous oxides.

<b>11 TOXICOLOGICAL INFORMATION (SEE ALSO BOX 2)</b>	
<b>Acute Toxicity</b>	Oral For aluminium phosphide: LD <sub>50</sub> (rat): 8.7 mg/kg For product: LD <sub>50</sub> (rat): 11.5 mg/kg Inhalation For phosphine: LC <sub>50</sub> (rat) (4hr): 0.015 mg/L LC <sub>50</sub> (rat) (6hr): >15.5 mg/m <sup>3</sup>
<b>Corrosivity/Irritation</b>	Dermal For aluminium phosphide: LD <sub>50</sub> (rat) : 500-1000 mg/kg Skin Not classifiable as a skin irritant. Eyes Contact with water liberates very toxic highly flammable gas which is irritating to the eyes. Respiratory tract Contact with water liberates very toxic highly flammable gas which is irritating to the respiratory system.
<b>Sensitisation</b>	Skin Contains no known skin sensitisers. Respiratory 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>	Fertility Product does not contain any components known to have effects on fertility. Development 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. Less than one sixth of a 3g tablet (0.5g) is a fatal dose for a 70kg 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 hypokalemia (potassium deficiency). IDLH (Immediately Dangerous to Life and Health) = 282mg/m <sup>3</sup> = 200ppm phosphine.

<b>12 ECOLOGICAL INFORMATION</b>	
<b>General Information</b>	This product is classified as very toxic to aquatic organisms. However, when used in accordance with instructions given, controlled release of this product is not expected to cause environmental contamination.
<b>Ecotoxicity Data</b>	For Phostoxin: LC <sub>50</sub> (Rainbow trout) (96 hrs): 9.7 x 10 <sup>-3</sup> ppm EC <sub>50</sub> (Daphnia magna) (24 hrs): 0.2 mg/L
<b>Mobility</b>	No data available.
<b>Persistence and Degradability</b>	Phosphine decomposes in the atmosphere within 5 - 28 hours.
<b>Bioaccumulative Potential</b>	Not likely to bioaccumulate.
<b>Other Adverse Effects</b>	None known.

<b>13 DISPOSAL CONSIDERATIONS</b>	
<b>Disposal of Waste Product</b>	This product is dangerous for the environment. Do not discharge to sewers, drains or watercourses. This product must be disposed of as hazardous waste through a licensed waste-disposal contractor. The production of waste should always be avoided through planning the operation well in advance, but if the product cannot be used up, then contact a licensed waste-disposal contractor.
<b>Disposal of Waste Flasks</b>	Handle and store empty flasks as if they still contained the product. Flasks must never be rinsed or cleaned but collected in a secure place, and left in the open air for several days. Large numbers of empty flasks should be moved to a deep open pit until any phosphine evolution is complete. The flasks should then be disposed of through a licensed waste-disposal contractor as hazardous waste.
<b>Applicators</b>	Exposure to atmospheric moisture should be sufficient to ensure that applicators will not be contaminated. However, do not carry or keep any contaminated applicators in confined spaces
<b>Classification</b> (Council Directive 91/689/EC, Commission Decision 2000/532/EC (amended) Commission Decision 2001/118/EC))	<u>Hazard Code:</u> <u>Hazard Code:</u> H3A(v)- Highly flammable, H6 – Toxic H12 – Production of toxic gases in contact with water, air or acid, H14 - Ecotoxic <u>Components making the waste hazardous</u> <u>Concentrations (%):</u> Aluminium phosphide 56%
<b>Note for Disposal</b>	The best means of disposal of any product is through proper use according to the label. However, should waste material be unavoidably generated then 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: +44(0) 870 850 6506

## PHOSTOXIN

14 TRANSPORT INFORMATION (INTERNATIONAL UNLESS OTHERWISE INDICATED)			
UN No.	UN1397		RIS Code
Transport Category	1	UK Hazchem EAC	Not required. PSP94, PSP95, PSP96
ADR 2009 (International Road)	Class 4.3	ADR HIN	Not required.
Proper Shipping Name	ALUMINIUM PHOSPHIDE, MIXTURE.		 
Limited Quantity Exemptions	Not permitted.		
Special Requirements	Not required. Packing Group I		
IMDG 2008 (Sea)	Class 4.3	IMDG EMS	F-G, S-N
Proper Shipping Name	ALUMINIUM PHOSPHIDE, MIXTURE.		 
Limited Quantity Exemptions	Not permitted		
Special Requirements	Not required. Packing Group I		
Note for Transport	Local, State or National requirements may apply to the carriage of this product.		

15 REGULATORY INFORMATION (HEALTH AND SAFETY INFORMATION (SEE ALSO BOX 2))	
Safety Phrases	<p>S7/8 Keep container tightly closed and dry.</p> <p>S3/9/49 Keep only in the original container in a cool well-ventilated place.</p> <p>S22 Do not breathe dust.</p> <p>S28 After contact with skin, wash immediately with plenty of soap and water.</p> <p>S30 Never add water to this product.</p> <p>S35 This material and its container must be disposed of in a safe way.</p> <p>S36/37 Wear suitable protective clothing and gloves.</p> <p>S38 In case of insufficient ventilation wear suitable respiratory equipment.</p> <p>S43 In case of fire, use dry sand, powder or carbon dioxide extinguishers. Never use water.</p> <p>S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).</p> <p>S57 Use appropriate containment to avoid environmental contamination.</p> <p>S61 Avoid release into the environment. Refer to special instructions/safety data sheet.</p>
Additional Label Phrases	To avoid risks to man and the environment, comply with the instructions for use.
Legislation	<p>Labelling is in accordance with UK regulations implementing the EC Directive 1999/45.</p> <p>Additional labelling requirements may be necessary in accordance with other National legislation. Outside the UK, the registration of this product may be necessary before use and any additional local requirements must be observed at all times. 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. Other National measures or guidance should be followed where appropriate.</p>

16 Other Information and indication of revisions	
Packaging Information	An aluminium flask containing approx. 90 g (approx. 30 x 3g tablets) of product, supplied in cardboard boxes of 1, 10 and 204 flasks.
Revisions	Changes have been made to the content of boxes 03, 05, 06, 07, 08, 09, 14 & 16 (as indicated by the thick lines on the left-hand side of the boxes) compared with issue 13.
Risk phrase text (From box 3 - These refer to the ingredients only. See box 2 for the product risk phrases)	<p>R12 : Extremely flammable.</p> <p>R15/29 : Contact with water liberates toxic, extremely flammable gas.</p> <p>R17 : Spontaneously flammable in air.</p> <p>R22 : Harmful if swallowed.</p> <p>R26 : Very toxic by inhalation.</p> <p>R28 : Very toxic if swallowed.</p> <p>R32 : Contact with acids liberates very toxic gas.</p> <p>R34 : Causes burns.</p> <p>R50 : Very toxic to aquatic organisms.</p>

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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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