

19:11:2007

Safety Data Sheet

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REVISION (see box 16)

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY		
Product Name	PHOSTOXIN	
Description	A vertebrate control agent for professional use. Grey, spherical, tablets in a canister. The phosphine gas, which is produced when the tablets come into contact with moisture, has a garlic or carbide odour.	
	Rentokil Initial Supplies, Liverpool, L33 7SR. Product Advice Line: 0151 548 5050 Emergency Line: 01342 833022 E-mail: techinfo@rentokil-initial.com	

2 HAZARD IDENTIFICATION

Classification (Supply - Use): In compliance with EC Directive 1999/45.

	(
F	Highly Flammable	R15/29	Contact with water liberates toxic, extremely flammable gas.
T+	Very Toxic	R26/28	Very toxic by inhalation and if swallowed.
		R32	Contact with acids liberates very toxic gas.
		R21	Harmful in contact with skin.
N	Dangerous for the environment	R50	Very toxic to aquatic organisms.
	CHAILOHILICHT		

Adverse Physical, Chemical, Significant Human Health and Environmental Effects (See also box 11):

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)

% w/w	Common*/Chemical Name, E	ELINCS/EINECS & CAS No. of Ingredients	EC 1999/45 Classification
56	Aluminium phosphide*	EINECS: 244-088-0	F : R15/29
		CAS: 20859-73-8	T+ : R28, R32
			N : R50
>25.0 ≤50.0	Ammonium carbamate*	EINECS: 214-185-2	X _n : R22
		CAS: 1111-78-0	
N.B. The hazar	d from this product is caused by the	e evolution of phosphine gas on contact with atmos	pheric moisture.
>25.0 ≤50.0	Phosphine*/hydrogen phosphide	EINECS: 232-260-8	F+ : R12, R17
		CAS: 7803-51-2	T+ : R26
			C : R34
			N : R50
>2.5 ≤10.0	Ammonia*	EINECS: 232-260-8	C : R34
		CAS : 7803-51-2	N : R50

4 FIRST-AID MEASURES (SEE ALSO "ADVERSE EFFECTS" IN BOX 2)

TINOT AID INLACORED (CEL ALGO ADVERGE ELLEGIO IN BOX 2)			
Inhalation Do not enter contaminated atmosphere, otherwise, wear self-contained breathing apparatus. I patient to fresh air, keep warm and at rest. Apply supportive measures if necessary. DO NOT to-mouth resuscitation. 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 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 ½ litre or 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".		
Note To Doctor	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 Fire Extinguisher Use carbon dioxide, sand or dry powder extinguishers. DO NOT USE WATER. **Type Special Fire-Fighting** Wear suitable personal protective equipment. **Procedures Special Exposure** Fires containing phosphine or metal phosphides may produce phosphoric acid. Hazards

ACCIDENTAL RELEASE MEASURES

Wear suitable personal protective equipment.

6

Personal Precautions

(See also box 8) Environmental

Environmental

Precautions water, and soil. Clean-up Procedure Evacuate the spillage area and ensure the area is well-ventilated. Wear a full-face respirator with (See also box 13) 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. If the spillage occurs outdoors, work upwind from the 7 HANDLING AND STORAGE (SEE ALSO BOX 8) Handling

This product is classified as dangerous for the environment. Keep away from drains, surface and ground

панинну	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 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 container having been opened once, is then re-opened.
8 EXPOSURE	CONTROLS/PERSONAL PROTECTION
0 EXI OCCIVE	CONTROLON EROCKAL I ROTLOTION
Exposure Standard - Directive EC/98/24 (1st	Workplace Exposure Limit (WEL) for phosphine is 0.14 mg/m³ long-term exposure (8 hour Time Weighted Average) and 0.28 mg/m³ short-term exposure (15 minute reference period).

IOELV Directive)	weighted Average) and 0.26 mg/m short-term exposure (15 minute reference period).
Engineering Controls	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:
Eye Protection	When opening the container, 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.
Hand Protection	Suitable hand protection such as synthetic rubber/PVC gloves.
Skin Protection	Suitable skin protection such as coveralls.
Breathing Protection	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

also meet P3 standard for particulates), or other respiratory equipment offering equivalent protection. Use only in accordance with instructions given. Any spillage should be dealt with as a priority in order that **Exposure Controls** contamination of watercourses or ground is avoided.

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

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STABILITY AND REACTIVITY 10 Conditions to avoid 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. Avoid contact with water and dilute strong acids. Phosphine gas is considered to be corrosive to Materials to avoid copper, copper alloys, silver and gold. Hazardous Breakdown Products Fires containing phosphine or metal phosphides may produce phosphoric acid.

TOXICOLOGICAL INFORMATION (SEE ALSO BOX 2)

Acute Toxicity Oral For aluminium phosphide: LD₅₀ (rat): 8.7 mg/kg

For product: LD₅₀ (rat): 11.5 mg/kg

For phosphine: LC₅₀ (rat) (4hr): 0.015 mg/L Inhalation

 LC_{50} (rat) (6hr): >15.5 mg/m³ For aluminium phosphide: LD₅₀ (rat): 500-1000 mg/kg

Dermal Corrosivity/ Not classifiable as a skin irritant. Skin

Irritation Contact with water liberates very toxic highly flammable gas which is irritating to the eyes. Eyes

Contact with water liberates very toxic highly flammable gas which is irritating to the respiratory

system. tract

Respiratory

Contains no known skin sensitisers.

Respiratory Contains no known respiratory sensitisers.

Repeat-Dose Toxicity Product does not contain any components known to have any effects relating to repeated-dose

toxicity. Product does not contain any components known to have a mutagenic effect.

Mutagenicity Carcinogenicity

Sensitisation

Reproductive **Fertility** Toxicity

Product does not contain any components known to have a carcinogenic effect. 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.

Other Information

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/m³ = 200ppm phosphine).

12 **ECOLOGICAL INFORMATION**

General Information This product is classified as very toxic to aquatic organisms. However, when used in accordance

Phosphine decomposes in the atmosphere within 5 - 28 hours.

with instructions given, controlled release of this product is not expected to cause environmental contamination.

Ecotoxicity Data

 LC_{50} (Rainbow trout) (96 hrs) : 9.7 x 10^{-3} ppm EC₅₀ (Daphnia magna) (24 hrs): 0.2 mg/L

Mobility No data available.

Persistence and

Degradability

Bioaccumulative Potential

Not likely to bioaccumulate.

Other Adverse Effects None known.

13 DISPOSAL CONSIDERATIONS

Disposal of Waste /

Containers

This product is dangerous for the environment. Do not discharge waste washings or waste

product to sewers, drains or watercourses.

Disposal must be in accordance with the relevant Approved Code of Practice.

Classification

(Council Directive 91/689/EC, Commission Decision 2000/532/EC (amended) Commission Decision

2001/118/EC))

Note for Disposal

Hazard Code: H3A(v)- Highly flammable, H6 - Toxic

H12 - Production of toxic gases in contact with water, air or acid, H14 - Ecotoxic Components making the waste hazardous Concentrations (%):

Aluminium phosphide 56%

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.

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UN No.	UN1397	Tremcard Reference No.	CEFIC TEC (R)- 43GWT2-I	RIS Code
Transport Category	1	UK Hazchem EAC	Not required.	FP04,Fp10
ADR 2005	Class 4.3	ADR HIN	Not required.	Labels
(International Road)				
Proper Shipping Name	ALUMINIUM PHOSPHI	ALUMINIUM PHOSPHIDE, MIXTURE.		
Limited Quantity Exemptions	Not required.			
Special Requirements	Not required.		Packing Group Ⅰ	6
IMDG 2004	Class 4.3	IMDG EMS	F-G, S-N	, v
(Sea)				
Proper Shipping Name	ALUMINIUM PHOSPHIDE, MIXTURE.			
Limited Quantity Exemptions	Not required.			WHEN WET
Special Requirements	Not required.		Packing Group	•
Note for Transport	Local, State or National	requirements may appl	y to the carriage of this product.	ı

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

16 Other Information and indication of revisions

To Strict information and indication of revisions					
Packaging Information		An aluminium flask containing 90g (30 x 3g tablets) of product, supplied in cardboard boxes of 10 and 204 flasks.			
Revisions	Changes have been made to the content of boxes 01, 08, 09, 13, & 16 (as indicated by the thick lines on the left-hand side of the boxes) compared with issue 11.				
Risk phrase text	R15/29	:	Contact with water liberates toxic, extremely flammable gas.		
(From box 3 - These refer to the ingredients only.	R28	:	Very toxic if swallowed.		
See box 2 for the product	R32	:	Contact with acids liberates very toxic gas.		
risk phrases)	R50	:	Very toxic to aquatic organisms.		
nok piliases)	R22	:	Harmful if swallowed.		
	R12	:	Extremely flammable.		
	R17	:	Spontaneously flammable in air.		
	R26	:	Very toxic by inhalation.		
	R34	:	Causes burns.		

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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.