



EUROPEAN COMMISSION  
HEALTH & CONSUMERS DIRECTORATE-GENERAL

Directorate E – Safety of the food chain  
Unit E.3 - Chemicals, contaminants, pesticides

Aluminium phosphide  
SANCO/181/08 – rev. 1  
9 September 2008

## **FINAL**

Review report for the active substance aluminium phosphide

Finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on  
28 October 2008  
in view of the inclusion of aluminium phosphide in Annex I of Directive 91/414/EEC

### **1. Procedure followed for the re-evaluation process**

This review report has been established as a result of the re-evaluation of aluminium phosphide, made in the context of the work programme for review of existing active substances provided for in Article 8(2) of Directive 91/414/EEC concerning the placing of plant protection products on the market, with a view to the possible inclusion of this substance in Annex I to the Directive.

Commission Regulation (EC) No 451/2000<sup>(1)</sup> laying down the detailed rules for the implementation of the second and third stages of the programme of work referred to in Article 8(2) of Council Directive 91/414/EEC, as last amended by Regulation (EC) No 1490/2002<sup>(2)</sup>, has laid down the detailed rules on the procedure according to which the re-evaluation has to be carried out. Aluminium phosphide is one of the existing active substances covered by this Regulation.

In accordance with the provisions of Article 4 of Regulation (EC) No 451/2000, Bernardo, Detia Freyberg GmbH and United Phosphorus Ltd notified to the Commission of their wish to secure the inclusion of the active substance aluminium phosphide in Annex I to the Directive.

Under Annex I to Regulation (EC) No 1490/2002 Germany was designated by the Commission as rapporteur Member State to carry out the assessment of aluminium phosphide on the basis of the dossiers submitted by the notifiers.

In Regulation (EC) No 1490/2002 the Commission specified furthermore that the deadline for the notifier with regard to the submission to the rapporteur Member States of the dossiers

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<sup>1</sup> OJ No L 55, 29.02.2000, p.25.

<sup>2</sup> OJ No L 224, 21.8.2002, p.23. Regulation as last amended by Regulation (EC) No 1095/2007 (OJ L 246, 21.09.2007, p. 19).

required under Article 7(2) of Regulation (EC) No 1490/2002, as well as for other parties with regard to further technical and scientific information was 30 November 2004.

Bernardo, Detia Freyberg GmbH and United Phosphorus Ltd submitted by the deadline dossiers to the rapporteur Member State which did not contain substantial data gaps, taking into account the supported uses. Therefore Bernardo, Detia Freyberg GmbH and United Phosphorus Ltd were considered to be the main data submitters.

In accordance with the provisions of Article 10(1) of Regulation (EC) No 1490/2002, Germany submitted on 19 June 2007 to the EFSA the report of their examination, hereafter referred to as the draft assessment report, including, as required, a recommendation concerning the possible inclusion of aluminium phosphide in Annex I to the Directive. Moreover, in accordance with the provisions of Article 10(2) of Regulation (EC) 1490/2002, the Commission and the Member States received also the summary dossier on aluminium phosphide from the notifiers.

In accordance with the provisions of Article 11 (c) of Regulation (EC) No 1490/2002, the EFSA organised the consultation on the draft assessment report by all the Member States as well as by Bernardo, Detia Freyberg GmbH and United Phosphorus Ltd being the main data submitters, on 29 October 2007 by making it available.

The EFSA organised an intensive consultation of technical experts from a certain number of Member States, to review the draft assessment report and the comments received thereon (peer review).

In accordance with the provisions of Article 11 of Regulation 1490/2002 the EFSA sent to the Commission its conclusion on the risk assessment [Conclusions regarding the peer review of the pesticide risk assessment of the active substance aluminium phosphide (finalised: 29 September 2008) <sup>3</sup>]. This conclusion refers to background document A (draft assessment report) and background document B (EFSA peer review report).

In accordance with the provisions of Article 12 of Regulation (EC) No 1490/2002, the Commission referred on 28 October 2008 a draft review report to the Standing Committee on the Food Chain and Animal Health, for final examination. The draft review report was finalised in the meeting of the Standing Committee on 28 October 2008.

The present review report contains the conclusions of the final examination by the Standing Committee. Given the importance of the conclusion of the EFSA, and the comments and clarifications submitted after the conclusion of the EFSA (background document C), these documents are also considered to be part of this review report.

## **2. Purposes of this review report**

This review report, including the background documents and appendices thereto, has been developed and finalised in support of the Directive **2008/125/EC**<sup>4</sup> concerning the inclusion of aluminium phosphide in Annex I to Directive 91/414/EEC, and to assist the Member States in decisions on individual plant protection products containing aluminium phosphide they have to

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<sup>3</sup> EFSA Scientific Report (2008) 182.

<sup>4</sup> Commission Directive 2008/125/EC (OJ L 344, 20.12.2008, p. 78)

take in accordance with the provisions of that Directive, and in particular the provisions of article 4(1) and the uniform principles laid down in Annex VI.

This review report provides also for the evaluation required under Section A.2.(b) of the above mentioned uniform principles, as well as under several specific sections of part B of these principles. In these sections it is provided that Member States, in evaluating applications and granting authorisations, shall take into account the information concerning the active substance in Annex II of the directive, submitted for the purpose of inclusion of the active substance in Annex I, as well as the result of the evaluation of those data.

In accordance with the provisions of Article 13 of Regulation (EC) No 1490/2002, Member States will keep available or make available this review report for consultation by any interested parties or will make it available to them on their specific request.

The information in this review report is, at least partly, based on information which is confidential and/or protected under the provisions of Directive 91/414/EEC. It is therefore recommended that this review report would not be accepted to support any registration outside the context of Directive 91/414/EEC, e.g. in third countries, for which the applicant has not demonstrated to have regulatory access to the information on which this review report is based.

### **3. Overall conclusion in the context of Directive 91/414/EEC**

The overall conclusion from the evaluation is that it may be expected that plant protection products containing aluminium phosphide will fulfil the safety requirements laid down in Article 5(1)(a) and (b) of Directive 91/414/EEC. This conclusion is however subject to compliance with the particular requirements in sections 4, 5, 6 and 7 of this report, as well as to the implementation of the provisions of Article 4(1) and the uniform principles laid down in Annex VI of Directive 91/414/EEC, for each aluminium phosphide containing plant protection product for which Member States will grant or review the authorisation.

Furthermore, these conclusions were reached within the framework of the uses which were proposed and supported by the main data submitters and mentioned in the list of uses supported by available data (attached as Appendix II to this review report).

Extension of the use pattern beyond those described above will require an evaluation at Member State level in order to establish whether the proposed extensions of use can satisfy the requirements of Article 4(1) and of the uniform principles laid down in Annex VI of Directive 91/414/EEC.

The following reference values have been finalised as part of this re-evaluation:

ADI 0.019 mg/kg bw/day  
ARfD 0.032 mg/kg bw  
AOEL 0.019 mg/kg bw/day

With particular regard to residues, the review has established that the residues arising from the proposed uses, consequent on application consistent with good plant protection practice, have no harmful effects on human or animal health. The Theoretical Maximum Daily Intake (TMDI; excluding water and products of animal origin) TMDI was up to 12% when calculated according

to the EFSA model. Additional intake from water and products of animal origin are not expected to give rise to intake problems.

Estimates of acute dietary exposure (NESTI/UESTI) were up to 8% of the ARfD when a adequate additional withholding period is taken into account.

The review has identified several acceptable exposure scenarios for operators, workers and bystanders, which require however to be confirmed for each plant protection product in accordance with the relevant sections of the above mentioned uniform principles.

The review has also concluded that under the proposed and supported conditions of use there are no unacceptable effects on the environment, as provided for in Article 4 (1) (b) (iv) and (v) of Directive 91/414/EEC, provided that certain conditions are taken into account as detailed in section 6 of this report.

#### **4. Identity**

The identity of aluminium phosphide is given in Appendix I.

The active substance shall comply with the minimum purity of 830 g/kg (see appendix I). At the time of the evaluation no FAO specification was allocated.

The review has established that for the active substance notified by the main data submitter none of the manufacturing impurities considered are, on the basis of information currently available, of toxicological or environmental concern.

#### **5. Endpoints and related information**

In order to facilitate Member States, in granting or reviewing authorisations, to apply adequately the provisions of Article 4(1) of Directive 91/414/EEC and the uniform principles laid down in Annex VI of that Directive, the most important endpoints were identified during the re-evaluation process. These endpoints are listed in the conclusion of the EFSA, and at section 3 of this report.

#### **6. Particular conditions to be taken into account on short term basis by Member States in relation to the granting of authorisations of plant protection products containing aluminium phosphide**

On the basis of the proposed and supported uses (as listed in Appendix II), the following particular issues have been identified as requiring particular and short term attention from all Member States, in the framework of any authorisations to be granted, varied or withdrawn, as appropriate.

Member States should pay particular attention to:

- the operator and worker safety and ensure that conditions of use prescribe the application of adequate personal and respiratory protective equipment;
- the protection of operators and workers during fumigation for indoor uses;
- the protection of workers at re-entry (after fumigation period) for indoor uses;
- the protection of bystanders against leaking of gas for indoor uses;
- the protection of consumers and ensure that the spent ready-to-use aluminium phosphide containing products are removed from the food commodity in uses against storage pests and subsequently an adequate additional withholding period is applied;
- the protection of birds and mammals. Conditions of authorisation should include risk mitigation measures, such as the closure of the burrows and the achievement of complete incorporation of granules in the soil, where appropriate;
- the protection of aquatic organisms. Conditions of authorisation should include risk mitigation measures, such as buffer zones between treated areas and surface water bodies, where appropriate.

## **7. List of studies to be generated**

No further studies were identified which were at this stage considered necessary in relation to the inclusion of aluminium phosphide in Annex I under the current inclusion conditions.

Some endpoints however may require the generation or submission of additional studies to be submitted to the Member States in order to ensure authorisations for use under certain conditions. The list of studies to be generated, still ongoing or available but not peer reviewed can be found in the relevant part of the EFSA Scientific report (page 32-33).

## **8. Information on studies with claimed data protection**

For information of any interested parties, the rapporteur Member State will keep available a document which gives information about the studies for which the main data submitter has claimed data protection and which during the re-evaluation process were considered as essential with a view to annex I inclusion. This information is only given to facilitate the operation of the provisions of Article 13 of Directive 91/414/EEC in the Member States. It is based on the best information available but it does not prejudice any rights or obligations of Member States or operators with regard to its uses in the implementation of the provisions of Article 13 of the Directive 91/414/EEC and neither does it commit the Commission.

## **9. Updating of this review report**

The information in this report may require to be updated from time to time in order to take account of technical and scientific developments as well as of the results of the examination of any information referred to the Commission in the framework of Articles 7, 10 or 11 of Directive

91/414/EEC. Any such adaptation will be finalised in the Standing Committee on the Food Chain and Animal Health, in connection with any amendment of the inclusion conditions for aluminium phosphide in Annex I of the Directive.

**APPENDIX I****Identity****ALUMINIUM PHOSPHIDE**

<b>Common name (ISO)</b>	Aluminium phosphide (there is no ISO common name for this compound)
<b>Chemical name (IUPAC)</b>	<i>Aluminium phosphide</i>
<b>Chemical name (CA)</b>	Aluminium phosphide
<b>CIPAC No</b>	227
<b>CAS No</b>	20859-73-8
<b>EEC No</b>	244-088-0
<b>FAO SPECIFICATION</b>	none
<b>Minimum purity</b>	830 g/kg
<b>Molecular formula</b>	AlP
<b>Molecular mass</b>	57.96 g/mol
<b>Structural formula</b>	Al-P-lattice (ionic structure)

## APPENDIX II

## List of uses supported by available data

## ALUMINIUM PHOSPHIDE

Crop and/or situation (a)	MS or Country	Product name	F/G /I (b)	Pests or Group of pests controlled (c)	Formulation		Application				Application rate per treatment			PHI	Remarks
					Type (d-f)	Conc. of as (i)	Method kind (f-h)	Growth stage & season (j)	Number min & max (k)	Interval between applications (min)	kg as/hl min & max	Water L/ha min & max	kg as/ha min & max	Days (l)	(m)
Out-door control of rodent and non-rodent species in underground burrows, e.g. in fields and meadows, orchards, forests:	Europe	Phostoxin Tabletten*	F	Moles Rabbits Rodents	GE	56 %	gassing	n.a.	1	n.a.	n.a.	n.a.	1 tablet (or 5 pellets) / 3-5 meters borrow length (light soil)/ or 1 tablet (or 5 pellets) / 8-10 meters burrow length (all other soils) 1-2 tablets / hole or mole hill	n.a.	

\*) same formulation as Phostoxin, Phostoxin Fumigation Tablets, Phostoxin P, Phostoxin RT, Phostoxin WM

**Summary of representative uses evaluated (aluminium phosphide, United Phosphorus Limited)\***

Crop and/or situation (a)	MS or Country	Product name	F/G/I (b)	Pests or Group of pests controlled (c)	Formulation		Application				Application rate per treatment			PHI days (l)	Remarks (m)
					Type (d-f)	Conc. of as (i)	method kind (f-h)	growth stage & season (j)	number min & max (k)	interval between applications (min)	kg as/hL min & max	water L/ha min & max	kg as/ha min & max		
Bulk grain loosely piled in silo bins  Bagged grain  Tobacco in bales Packed, Processed food and animal feed  Space fumigation: Empty warehouses, mills etc	Europe	Quickphos Tablets*	I	Storage pest	GE	57 %	fumigation	n.a.	1	n.a.	n.a.	n.a.	2 - 5 tablets per tonne	n.a.	
	Europe	Quickphos Pellets**	I	Storage pest	GE	57 %	fumigation	n.a.	1	n.a.	n.a.	n.a.	10 - 25 pellets per tonne	n.a.	
	Europe	Quickphos Bags 56 GE***	I	Storage pest	GE	57 %	fumigation	n.a.	1	n.a.	n.a.	n.a.	1 - 2 bags (34 g) per 10 m <sup>3</sup>	n.a.	

\* same formulation as Quickphos Comprimes Tablets, Quickphos TB, Quickphos Tableta, Quickphos Tablets 56 GE, Quickphos Tablete Fumigante, Quickphos-T,

\*\* same formulation as Delicia Gastoxin, Trinol Fosforbrinte, Qickphos Comprise, Quickphos Pellets 56 GE

\*\*\* same formulation as Fumitoxin R, Quickphos Belts 56 GE, Quixckphos Blankets 56 GE,

- Remarks:**
- (a) For crops, the EU and Codex classifications (both) should be used; where relevant, the use situation should be described (*e.g.* fumigation of a structure)
  - (b) Outdoor or field use (F), glasshouse application (G) or indoor application (I)
  - (c) *e.g.* biting and suckling insects, soil born insects, foliar fungi, weeds
  - (d) *e.g.* wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
  - (e) GCPF Codes - GIFAP Technical Monograph No 2, 1989
  - (f) All abbreviations used must be explained
  - (g) Method, *e.g.* high volume spraying, low volume spraying, spreading, dusting, drench
  - (h) Kind, *e.g.* overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated
  - (i) g/kg or g/l
  - (j) Growth stage at last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
  - (k) The minimum and maximum number of application possible under practical conditions of use must be provided
  - (l) PHI - minimum pre-harvest interval
  - (m) Remarks may include: Extent of use/economic importance/restrictions