



EUROPEAN COMMISSION
HEALTH AND CONSUMERS DIRECTORATE-GENERAL

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

Copper compounds
SANCO/150/08 final
26 May 2009

Review report for the active substance Copper compounds
Finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on
23 January 2009
in view of the inclusion of Copper compounds 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 Copper compounds, 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⁽¹⁾ 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⁽²⁾, has laid down the detailed rules on the procedure according to which the re-evaluation has to be carried out. Copper compounds are existing active substances covered by this Regulation formerly under the definition copper compounds.

In accordance with the provisions of Article 4 of Regulation (EC) No 451/2000, European Union Copper Task Force notified to the Commission of their wish to secure the inclusion of the Copper compounds in Annex I to the Directive.

In accordance with the provisions of Article 5 of Regulation (EC) No 451/2000, the Commission, designated France as rapporteur Member State to carry out the assessment of (AS) on the basis of the dossiers submitted by the notifier. 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 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 2003.

¹ OJ No L 55, 29.02.2000, p.25.

² OJ No L 224, 21.8.2002, p.23.
(OJ L 246, 21.09.2007, p. 19).

The notifier submitted by the deadline a dossier to the rapporteur Member State which did not contain substantial data gaps, taking into account the supported uses. Therefore European Union Copper Task Force was considered to be the sole data submitter.

In accordance with the provisions of Article 10(1) of Regulation (EC) No 1490/2002, France submitted on 20 April 2005 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 Copper compounds 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 Copper compounds from the notifier.

In accordance with the provisions of Article 11 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 European Union Copper Task Force being the sole data submitter, on 7 October 2005 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 (4) 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 Copper compounds (finalised 30 September 2008)³]. 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 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 23 January 2009.

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 **2009/37/EC**⁴ concerning the inclusion of Copper compounds in Annex I to Directive 91/414/EEC, and to assist the Member States in decisions on individual plant protection products containing Copper compounds they have to 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

³ EFSA Scientific Report (2008) n, 187.

⁴ OJ No L 104, 24.4.2009, p.23

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 Copper compounds 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 Copper compounds 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 submitter 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 [0.15] mg/Kg bw/day
ARfD [not applicable]
AOEL [0.072] mg/Kg bw/day

With particular regard to residues, the review has established that the residues arising from the proposed use, consequent on application consistent with good plant protection practice, have no harmful effects on human or animal health. The highest Theoretical Maximum Daily Intake (TMDI) is 10.3% of the Acceptable Daily Intake (ADI), based on the FAO/WHO Cluster B Diet (August 1994).

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 Copper compounds is given in Appendix I.

The active substance shall comply with the FAO specification and there seem not to be reasons for deviating from that specification; the FAO specification is given in Appendix I of this report.

The review has established that for the active substance notified by the main data submitter heavy metals are, on the basis of information currently available, of toxicological or environmental concern and must not exceed the following maximum levels: Lead max 0.0005 g/kg of copper content, Cadmium max 0.0001 g/kg of copper content and Arsenic max 0.0001 g/kg of copper content respectively in the technical material.

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 Copper compounds

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 specification of the technical material as commercially manufactured which must be confirmed and supported by appropriate analytical data. The test material used in the toxicity dossiers should be compared and verified against this specification of the technical material;
- the operator and worker safety and ensure that conditions of use prescribe the application of adequate personal protective equipment where appropriate;
- the protection of water and non target organisms. In relation to these identified risks risk mitigation measures, such as buffer zones, should be applied where appropriate;
- the amount of active substance applied and ensure that the authorised amounts, in terms of rates and number of applications, are the minimum necessary to achieve the desired effects.

Member States shall initiate monitoring programmes in vulnerable areas where the contamination of the soil compartment by copper is of concern, in order to set, where appropriate, limitations such as maximum application rates.

7. List of studies to be generated

The concerned Member States shall request the submission of information to further address:

- the risk from inhalation;
- the risk assessment for non target organisms and for soil and water.

They shall ensure that the notifiers at whose request Copper compounds have been included in this Annex provides such information to the Commission by 31 October 2011 at the latest. Some other endpoints however 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.

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 Copper compounds in Annex I of the Directive.

APPENDIX I

Identity

Copper compounds

Common name (ISO)	Copper hydroxide	Copper oxychloride	Bordeaux mixture	Tribasic copper sulphate	Copper (I) oxide
Chemical name (IUPAC)	<i>Copper (II) hydroxide</i>	<i>Dicopper chloride trihydroxide</i>	<i>Not allocated</i>	<i>Not allocated</i>	<i>Copper (I) oxide</i>
Chemical name (CA)	<i>Copper hydroxide</i>	<i>Copper chloride oxide hydrate or Copper chloride hydroxide</i>	<i>Not allocated</i>	<i>Not allocated</i>	<i>Copper (I) oxide</i>
CIPAC No	44.305	44.602	44.604	44.306	44.603
CAS No	20427-59-2	1332-65-6 or 1332-40-7	8011-63-0	12527-76-3	1317-39-1
EEC No	243-815-9	215-572-9	Not allocated	Not allocated	215-270-7
FAO SPECIFICATIONS	57.3% Lead max 0.0005 g/kg of copper content Cadmium max 0.0001 g/kg of copper content Arsenic max 0.0001 g/kg of copper content	55 % Lead max 0.0005 g/kg of copper content Cadmium max 0.0001 g/kg of copper content Arsenic max 0.0001 g/kg of copper content	No	No	82% Lead max 0.0005 g/kg of copper content Cadmium max 0.0001 g/kg of copper content Arsenic max 0.0001 g/kg of copper content
Minimum purity	≥ 573 g/kg	≥ 550 g/kg	≥ 245 g/kg	≥ 490 g/kg	≥ 820 g/kg
Identity of relevant impurities (of toxicological, environmental and/or other significance) in the Active substance as manufactured (g/kg)	Lead max 0.0005 g/kg of copper content Cadmium max 0.0001 g/kg of copper content Arsenic max 0.0001 g/kg of copper content	Lead max 0.0005 g/kg of copper content Cadmium max 0.0001 g/kg of copper content Arsenic max 0.0001 g/kg of copper content	Lead max 0.0005 g/kg of copper content Cadmium max 0.0001 g/kg of copper content Arsenic max 0.0001 g/kg of copper content	Lead max 0.0005 g/kg of copper content Cadmium max 0.0001 g/kg of copper content Arsenic max 0.0001 g/kg of copper content	Lead max 0.0005 g/kg of copper content Cadmium max 0.0001 g/kg of copper content Arsenic max 0.0001 g/kg of copper content
Molecular formula	CuH ₂ O ₂	[ClCu ₂ H ₃ O ₃] _n , n= 1 or 2	Ca ₃ Cu ₄ H ₆ O ₂₂ S ₄ nH ₂ O where n = 1 to 6	Cu ₄ H ₇ O _{10.5} S	Cu ₂ O

Molecular mass	97.6 g/mol	213.6 n with n=1 or 2	860 + n18	461.3	143.14
Structural formula	Cu(OH) ₂	[Cu ₂ Cl(OH) ₃] _n	Cu ₄ (OH) ₆ SO ₄ ·3CaSO ₄ ·nH ₂ O where n = 1 to 6	Cu ₄ (OH) ₆ SO ₄ · $\frac{1}{2}$ H ₂ O	Cu ₂ O

APPENDIX II

List of uses supported by available data

Copper compounds

Crop and/or situation (a)	Member State or Country	Product name	F G or 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 max		
Tomato (industrial and fresh)	S	Kocide 101	G	Bacteria and fungi	WP	500 g/kg	field crop sprayer	all stages	6	7	0.25	500	1.25	10 (industrial) 3 (fresh)	
		Cuprocaffaro WP			WP	500 g/kg					0.25	500	1.25		
		Bordeaux mixture			WP	200 g/kg					0.25	500	1.25		
		MACC80													
		Cuproxtat SC			SC	190 g/L					0.16	500	0.80		
Nordox 75WG	WG	750 g/kg	0.225	500	1.125										

- 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

