



EUROPEAN COMMISSION  
HEALTH & CONSUMER PROTECTION DIRECTORATE-GENERAL

Directorate D - Food Safety: Production and distribution chain  
**Unit D.3 - Chemicals, contaminants and pesticides**

MCPB

SANCO/4063/2001-final

15 April 2005

**COMMISSION WORKING DOCUMENT - DOES NOT NECESSARILY REPRESENT  
THE VIEWS OF THE COMMISSION SERVICES**

Review report for the active substance **MCPB**

Finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on  
**15 April 2005**  
in view of the inclusion of MCPB 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 MCPB, 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 (EEC) No 3600/92<sup>(1)</sup> laying down the detailed rules for the implementation of the first stage of the programme of work referred to in Article 8(2) of Council Directive 91/414/EEC, as last amended by Regulation (EC) No 2266/2000<sup>(2)</sup>, has laid down the detailed rules on the procedure according to which the re-evaluation has to be carried out. MCPB is one of the 90 existing active substances covered by this Regulation.

In accordance with the provisions of Article 4 of Regulation (EEC) No 3600/92, ACI International on 30 July 1993 and A H Marks & Co Ltd on 20 July 1993 notified to the Commission of their wish to secure the inclusion of the active substance MCPB in Annex I to the Directive.

In accordance with the provisions of Article 5 of Regulation (EEC) No 3600/92, the Commission, by its Regulation (EEC) No 933/94<sup>(3)</sup>, as last amended by Regulation (EC) No 2230/95<sup>(4)</sup>, designated Italy as rapporteur Member State to carry out the assessment of MCPB on the basis of the dossier/s submitted by the notifier/s. In the same Regulation, the Commission

---

<sup>1</sup> OJ No L 366, 15.12.1992, p.10.

<sup>2</sup> OJ No L 259, 13.10.2000, p.27.

<sup>3</sup> OJ No L 107, 28.04.1994, p.8.

<sup>4</sup> OJ No L 225, 22.09.1995, p.1.

specified furthermore the deadline for the notifiers with regard to the submission to the rapporteur Member States of the dossiers required under Article 6(2) of Regulation (EEC) No 3600/92, as well as for other parties with regard to further technical and scientific information; for MCPB this deadline was 30 April 1995.

Only A H Marks & Co Ltd submitted in time a dossier to the rapporteur Member State which did not contain substantial data gaps, taking into account the supported uses. Therefore A H Marks & Co Ltd was considered to be the main data submitter.

In accordance with the provisions of Article 7(1) of Regulation (EEC) No 3600/92, Italy submitted on 19 December 2001 to the Commission the report of its examination, hereafter referred to as the draft assessment report, including, as required, a recommendation concerning the possible inclusion of MCPB in Annex I to the Directive. Moreover, in accordance with the same provisions, the Commission and the Member States received also the summary dossier on MCPB from A H Marks & Co Ltd on 5 March 2002.

In accordance with the provisions of Article 7(3) of Regulation (EEC) No 3600/92, the Commission forwarded for consultation the draft assessment report to all the Member States as well as to A H Marks & Co Ltd being the main data submitter, on 19 December 2001.

The Commission 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 particular on each of the following disciplines:

- identity and physical /chemical properties ;
- fate and behaviour in the environment ;
- ecotoxicology ;
- mammalian toxicology ;
- residues and analytical methods ;
- regulatory questions.

The meetings for this consultation were organised on behalf of the Commission by the Pesticide Safety Directorate (PSD) in York, United Kingdom, from February to September 2002.

The report of the peer review (i.e. full report) was circulated, for further consultation, to Member States and the main data submitter on 11 October 2002 for comments and further clarification.

In accordance with the provisions of Article 7(3) of Regulation (EEC) No 3600/92, the dossier, the draft assessment report, the peer review report (i.e. full report) and the comments and clarifications on the remaining issues, received after the peer review were referred to the Standing Committee on the Food Chain and Animal Health, and specialised working groups of this Committee, for final examination, with participation of experts from the 15 Member States. This final examination took place from February 2002 to April 2005, and was finalised in the meeting of the Standing Committee on Food Chain and Animal Health on 15 April 2005.

The review did not reveal any open questions or concerns which would have required a consultation of the Scientific Committee on Plants.

The present review report contains the conclusions of the final examination; given the importance of the draft assessment report, the peer review report (i.e. full report) and the

comments and clarifications submitted after the peer review as basic information for the final examination process, these documents are considered respectively as background documents A, B and C to this review report and are part of it.

## **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 2005/57/EC<sup>5</sup> concerning the inclusion of MCPB in Annex I to Directive 91/414/EEC, and to assist the Member States in decisions on individual plant protection products containing MCPB 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 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 7(6) of Regulation (EEC) No 3600/92, 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. Moreover the Commission will send a copy of this review report (not including the background documents) to all operators having notified for this active substance under Article 4(1) of this Regulation.

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 MCPB 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 MCPB containing plant protection product for which Member States will grant or review the authorisation.

These conclusions were reached, in particular, for the acid of MCPB for which detailed information has been submitted. Further studies, in particular bridging studies, may be necessary in relation to the acceptance of salts or esters of MCPB other than the acid evaluated.

---

<sup>5</sup> OJ No L 246, 22.09.2005, p. 14-16

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 IV 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.

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) for a 60 kg adult is 3.3 % of the Acceptable Daily Intake (ADI), based on the FAO/WHO European Diet (August 1994). Additional intake from water and products of animal origin are not expected to give rise to intake problems.

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 and Physical/chemical properties**

The main identity and the physical/chemical properties of MCPB are 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 A H Marks & Co Ltd, 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 Appendix II.

## **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 MCPB**

On the basis of the proposed and supported uses (as listed in Appendix IV), 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 potential for groundwater contamination, when the active substance is applied in regions with vulnerable soil and/or climatic conditions. Conditions of authorisation should include risk mitigation measures, where appropriate.
- 
- Member States must pay particular attention to the protection of aquatic organisms and must ensure that the conditions of authorisation include, where appropriate, risk mitigation measures.

## **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 MCPB 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. This may particularly be the case for additional bridging studies in relation to the acceptance of salts and esters of MCPB other than the acid which was evaluated.

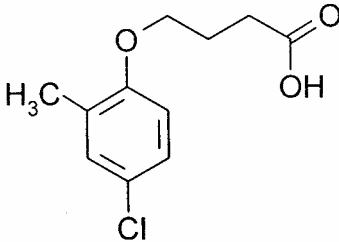
## **8. Information on studies with claimed data protection**

For information of any interested parties, Appendix III 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 to the Commission services at the time this review report was prepared; 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 neither does it commit the Commission.

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

The technical 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. Such adaptations will be examined and finalised in the Standing Committee on the Food Chain and Animal Health, in connection with any amendment of the inclusion conditions for MCPB in Annex I of the Directive.

**APPENDIX I****Identity, physical and chemical properties****MCPB**

<b>Common name (ISO)</b>	MCPB	
<b>Development Code (for new actives only)</b>	Not needed (existing compound).	
<b>Chemical name (IUPAC)</b>	4-(4-chloro-o-tolyloxy)butyric acid.	
<b>Chemical name (CA)</b>	4-(4-chloro-2-methylphenoxy)butyric acid.	
<b>CIPAC No</b>	50	
<b>CAS No</b>	94-81-5	
<b>EEC No</b>	607-053-00-4 (202-365-3 EINECS)	
<b>FAO SPECIFICATION</b>	FAO Specification AGP: CP/100 (1984)	
	Total active content	840 g/kg minimum
	Water	< 15 g/kg
	Free Phenols	< 30 g/kg
	Sulphated ash	as 4-chloro-2-methylphenol
	Triethanolamine insolubles	< 10 g/kg
		< 1 g/kg residue on 105 µm test sieve.
<b>Minimum purity</b>	920 g/kg	
<b>Molecular formula</b>	C <sub>11</sub> H <sub>13</sub> ClO <sub>3</sub>	
<b>Molecular mass</b>	228.7	
<b>Structural formula</b>		

<b>Melting point</b>	Technical material (965 g/kg) Melting point 95 -100 °C. Purified material (986 g/kg) Melting point = 101°C.	
<b>Boiling point</b>	623 +/- 0.5 °C with minor decomposition.	
<b>Appearance</b>	Technical (962 g/kg ) and purified material (986 g/kg ) White solid (flake or powder) N8/ (Munsell). Phenolic like odour .	
<b>Relative density</b>	Technical material (965 g/kg) = 1.254 at 22°C. Purified material (986 g/kg) = 1.233 at 20°C.	
<b>Vapour pressure</b>	Purified material (998 g/kg) = $4 \times 10^{-6}$ Pa at 25°C	
<b>Henry's law constant</b>	$3 \times 10^{-5}$ Pa.m <sup>3</sup> .mol <sup>-1</sup>	
<b>Solubility in water</b>	Purified material (>900 g/Kg): 25.0 ± 2.2 mg/l at 20°C Purified material (986 g/kg) pH 5 buffered 20°C = 0.11 g/l pH 7 buffered 20°C = 4.4 g/l pH 9 buffered 20°C = 444 g/l	
<b>Solubility in organic solvents</b>	Technical material (965 g/kg)	20°C g/l solvent
	Acetone	313 ± 22
	Dichloromethane	169 ± 6
	n-Hexane	0.266 ± 0.018
	Technical material (962 g/kg)	20°C g/kg solvent
	Methanol	386
	Ethylacetate	228
	n-heptane	3.0
	Xylene	74.1
	1,2 dichloroethane	69.3
	n-Octanol	157
	Acetone	452
<b>Partition co-efficient (log P<sub>ow</sub>)</b>	Purified material (986 g/kg) pH 5 log P <sub>ow</sub> = > 2.37 (20°C). pH 7 log P <sub>ow</sub> = 1.32 (20°C). pH 9 log P <sub>ow</sub> = - 0.17 (20°C).	
<b>Hydrolytic stability (DT<sub>50</sub>)</b>	Stable at pH 5, 7 and 9 for 30 days at 25°C % degradation of the parent compound were: 4.6% at pH 5; 4.1% at pH 7; 2.8% at pH 9.	
<b>Dissociation constant</b>	pK <sub>a</sub> = 4.50 at 21 °C (Purity 96.68 %).	
<b>Quantum yield of direct photo-transformation in water at λ &gt;290 nm</b>	Φ = - 0.068	
<b>Flammability</b>	Not highly flammable: it failed to ignite in the preliminary screening test (Purity 95.5%).	

<b>Explosive properties</b>	No data submitted MCPB does not contain phosphores or auxophoses (i.e. functional groups known to confer or enhance explosivity). MCPB therefore is not expected to exhibit explosive properties.			
<b>UV/VIS absorption (max.)</b>	Absorption	$\lambda$ (nm)	AU	Extinction Coefficient (dm <sup>3</sup> /mol/cm)
	Maximum	278	0.150	1714
	Maximum	228	0.860	9827
<b>Photostability in water (DT<sub>50</sub>)</b>	The calculated photodegradation half-lives were pH 5 = 2.2 d pH 7 = 2.6 d pH 9 = 2.4 d The 5 major photolysis products at pH 5, 7 and 9 are: 1) 4-(4-hydroxy- <i>o</i> -tolylloxy)butyric acid; 2) 2,4-dihydroxyphenyl formate; 3) <i>o</i> -cresol; 4) benzoic acid; 5) 2-hydroxyphenyl formate			

## APPENDIX II

### END POINTS AND RELATED INFORMATION

#### MCPB

## 1 Toxicology and metabolism

### Absorption, distribution, excretion and metabolism in mammals

Rate and extent of absorption:	High bioavailability (about 85 %) within 48 h (mostly in 24 h) for the rats.
Distribution:	Uniformly distributed.
Potential for accumulation:	No evidence for accumulation.
Rate and extent of excretion:	Rapid and extensive, app. 80 % and 6% via urine and faeces respectively within 48 h (5 mg/kg bw).
Toxicologically significant compounds:	MCPA is the most significant metabolite in all systems and the only significant metabolite in plants and animals. The phenol, PCOC is a minor but transient metabolite in soil.
Metabolism in animals:	Extensively metabolised (> 95 %); main metabolite MCPA (>30% of administered dose, about 50% of urinary activity within 12 hours); also HMCPA, HMCPB unconjugated and conjugated.

### Acute toxicity

Rat LD <sub>50</sub> oral:	4300 mg/kg bw male; 5300 mg/kg bw female.
Rat LD <sub>50</sub> dermal:	> 2000 mg/kg bw.
Rat LC <sub>50</sub> inhalation:	> 1.14 mg/l air /4h, whole body.
Skin irritation:	Non-irritant.
Eye irritation:	Non-irritant.
Skin sensitization (test method used and result):	Not sensitizer.

## Short term toxicity

Target / critical effect:	kidney, haematology
Lowest relevant oral NOAEL / NOEL:	90 d rat: 100 ppm (6.3mg/kg bw/d); 90d, dog: 80 ppm (2 mg/kg bw/d )
Lowest relevant dermal NOAEL / NOEL:	No Study for MCPB. MCPA 1000 mg/kg bw/d. for systemic toxicity.
Lowest relevant inhalation NOAEL / NOEL:	No data - not required.

## Genotoxicity

Overall conclusion: no relevant genotoxic potential *in vitro* or *in vivo*.

## Long term toxicity and carcinogenicity

Target / critical effect:	Kidney and blood.
Lowest relevant NOEL/NOAEL:	MCPA 2 years rat: NOEL 20 ppm = 1.3 mg/kg bw/d NOAEL 80 ppm = 5.2mg/kg bw/d
Carcinogenicity:	No evidence of carcinogenicity when evaluated as MCPA.

## Reproductive toxicity

Target / critical effect - Reproduction:	MCPA Two generations, rat: reduced postnatal body weight gain at maternally toxic dose.
Lowest relevant reproductive NOAEL / NOEL:	NOEL: 150 ppm – about 8 mg/kg bw/d.
Target / critical effect - Developmental toxicity:	MCPB rat: reduced foetal weight and ossification MCPB rabbit: maternal toxicity
Lowest relevant developmental NOAEL / NOEL:	Rat; NOEL: 25 mg/kg bw/d : Rabbit; developmental NOEL > 60 mg/kg bw/d.

## Delayed neurotoxicity

No data – not required.

## Other toxicological studies

Data presented to show that the rat is a better model of human response than the dog for MCPA and other phenoxy herbicides.

## Medical data

No overall increase in cancer risk or, risk for NHL and soft tissue sarcomas in manufacturing workers exposed to dioxin-free phenoxy herbicides as evidenced in a meta-analysis study.

## Summary

	Value	Study	Safety factor
ADI:	0.01mg/kg bw/d	24-month chronic rat study with MCPA	100
AOEL systemic:	0.06 mg/kg bw/d	90-d oral rat (males)	100
AOEL inhalation:	Not required		
AOEL dermal:	Not required		
ARfD (acute reference dose):	0.05 mg/kg bw/d	Maternal toxicity develop. study in rabbit 5 mg/kg/bw/d	100

## Dermal absorption

2% (Concentrate), 4.4% (spray strength) based on *in vivo* and *in vitro* studies.

## 2 Fate and behaviour in the environment

### 2.1 Fate and behaviour in soil

#### Route of degradation

##### Aerobic:

Mineralization after 100 days:

120 d: 58% of total amount of radioactivity applied was recovered as  $^{14}\text{CO}_2$ .

Non-extractable residues after 100 days:

120 d: 30% of total amount of radioactivity applied was found as soil-bound residues.

Major metabolites above 10 % of applied active substance: name and/or code % of applied rate (range and maximum)

6 extractable metabolites  
Potentially major:  
MCPA 5.8%-6.2% at d 8-15; 0.6% at d 120.  
HMCPA 9.5%-5.0% at d 8-15; 2.0% at d 120.  
The amounts of the other 4 metabolites did not exceed 4.4% of the applied radioactivity at d 8 and 0.8% at d 120.  
The metabolite MCPA is an active substance in its own right and may be the active principle.

#### Supplemental studies

##### Anaerobic:

Degradation unlikely, based on the available information.

##### Soil photolysis:

DT<sub>50lab</sub> (in artificial sunlight) 30 d.  
DT<sub>50lab</sub> (dark control) 11 d.  
It is not a mayor route of MCPB degradation (no photoproducts greater than 10% of the applied radioactivity in irradiated soil).

##### Remarks:

None.

#### Rate of degradation

##### Laboratory studies

DT<sub>50lab</sub> (20 °C, aerobic):

DT<sub>50LAB</sub> MCPB (22°C, aerobic): 6.8 d.  
(from 2 to 11.4 days; n = 11)

DT<sub>90lab</sub> (20 °C, aerobic):

DT<sub>50LAB</sub> MCPA: (25° C, aerobic) 24 d.

DT<sub>90LAB</sub> MCPB: (22°C, aerobic): 22.6 d.  
(theoretically calculated)

DT<sub>50lab</sub> (10 °C, aerobic):

DT<sub>50LAB</sub> (10°C, aerobic): 17.5 d calculated.

DT<sub>50lab</sub> (20 °C, anaerobic):

DT <sub>50LAB</sub> (20°C, anaerobic): No requirement - No degradation is expected
--

**Field studies (country or region)**

DT<sub>50f</sub> from soil dissipation studies:

No data submitted. Not required.
----------------------------------

DT<sub>90f</sub> from soil dissipation studies:

No data submitted. Not required.
----------------------------------

Soil accumulation studies:

Is not expected.
------------------

Soil residue studies:

No data submitted. Not required.
----------------------------------

**Remarks:**

e.g. effect of soil pH on degradation rate

None determined down to pH 5.4. MCPA shows no effect in the range pH 5-8. Very low pH (<4) may influence degradation .
--

**Adsorption/desorption** $K_f / K_{oc}$ : $K_d$ :

pH dependence:

MCPB

 $K_{oc}$  pH < 7.0  $K_{oc} = 86 - 130$   $1/n = 0.740 - 0.898$ ;  
 $n = 2$ . Average  $K_{oc} = 108$ ;  $1/n = 0.819$ . $K_{oc}$  pH > 7.0  $K_{oc} = 31 - 48$   $1/n = 0.898 - 0.995$   
 $n = 2$ . Average  $K_{oc} = 39.5$ ;  $1/n = 0.946$ .MCPA:  $K_{oc}$  10 - 157 ( 8 soils -mean value 74)Yes.  $K_{oc}$  higher with low pH (MCPB and MCPA)**Mobility****Laboratory studies:**

Column leaching:

Column was divided in 6 layers.

Mobile to very mobile in soil in dependence on the soil type.

The radioactivity of fresh leaching MCPB residues was concentrated in the 0-12 cm soil layer.

Leachate contamination range from 75.78 % in sand soil to 2.80 % in sandy clay loam.

Aged residue leaching:

The radioactivity of aged (29 d) MCPB residues was concentrated in the top 6 cm soil layer after leaching. Leachate contamination range from 56% in sand soil to 0.24 % in sandy loam.

MCPA residues (% dose) : 13% in sandy soil, 0,32% in sandy clay loam, 1.29% in clay loam and 0.08% in sandy loam.

**Field studies:**

Lysimeter/Field leaching studies:

Not performed. Not required as results of FOCUS groundwater modelling for MCPB and metabolite MCPA show acceptable predicted levels.

**Remarks:**

Not all scenarios in the FOCUS model are relevant. MCPB is used on peas and this is not a valid crop at all locations.

## 2.2 Fate and behaviour in water

### Abiotic degradation

Hydrolytic degradation:

Major metabolites:

Photolytic degradation:

Major metabolites:

<sup>14</sup> C – MCPB is stable for 30 d in sterile aqueous buffered solutions at pH 5, 7 and 9.
None –Stable.
<p>MCPB degraded rapidly in aqueous solutions buffered at pH 5, 7 and 9 under irradiated conditions. After 14 d MCPB concentration was 1.5%, &lt; 0.1%, and 2.2% respectively.</p> <p>Five major degradation products are detected at pH 5, 7 and 9 <b>respectively</b> :</p> <p>o-cresol 18%; 48.5%; 26.2%</p> <p>4-(4-hydroxy-o-tolyloxy)butyric acid 33%; 28.5%; 17.8%</p> <p>2,4 dihydroxyphenyl formate 41.6%; 36.5%; 23.2%</p> <p>benzoic acid 13.8%; 1.6%; 7.4%</p> <p>2-hydroxyphenyl formate 10.4%; 4.9%; 14.4%</p> <p>Half-life: 2.2 d at pH 5; 2.6 d at pH 7; 2.4 d at pH 9 (based on a 12 hour day irradiation).</p>
See above.

## Biological degradation

Readily biodegradable:

No specific test presented. From the studies examined it is unlikely that MCPB will fulfil the criteria for ready biodegradability.

Water/sediment study:

For both compounds results are mean of 2 sediments.

DT<sub>50</sub> water:

9.7 d

DT<sub>90</sub> water:

32.5 d

DT<sub>50</sub> whole system:

17 d

DT<sub>90</sub> whole system:

57.5 d

Distribution in water / sediment systems  
(active substance)

More than 51% of applied dose was converted to CO<sub>2</sub> in 91 d. Less than 20% was detected in the sediment, mainly as bound residues.

Distribution in water / sediment systems  
(metabolites)

See MCPA data below .

MCPA :

DT<sub>50</sub> water:

13.5 d

DT<sub>90</sub> water:

44.7 d

DT<sub>50</sub> whole system:

16.9 d

DT<sub>90</sub> whole system:

56.2 d

Distribution in water / sediment systems  
(active substance)

63% of applied dose was converted to CO<sub>2</sub> in 84 d. Less than 20% was detected in the sediment system.

Distribution in water / sediment systems  
(metabolites)

Only CO<sub>2</sub> was identified as a significant metabolite.

Accumulation in water and/or sediment:

No accumulation of parent or metabolites.

**Degradation in the saturated zone** Not required.

**Remarks:**

None.

## 2.3 Fate and behaviour in air

### Volatility

Vapour pressure:

Purified material (998 g/kg) = $4 \times 10^{-6}$ Pa at 25°C.
---

Henry's law constant:

$3 \times 10^{-5}$ Pa.m <sup>3</sup> .mol <sup>-1</sup>
---

### Photolytic degradation

Direct photolysis in air:

Degradation rate from OH-attack was found to be $K_{OH} = 20.25 \cdot 10^{-12}$ cm <sup>3</sup> molecule <sup>-1</sup> s <sup>-1</sup> . Based on this value the atmospheric degradation half-life was 0.49 d.
--

Photochemical oxidative degradation in air

No data. Low volatility of MCPB means that atmospheric accumulation is unlikely.
--

DT<sub>50</sub>:

Volatilisation:

From plant surfaces: No data, low volatility of MCPB means that no significant loss is expected.
--

From soil: No data, low volatility of MCPB means that no significant loss is expected.
--

Remarks:

None.
-------

### 3 Ecotoxicology

#### Terrestrial Vertebrates

Acute toxicity to mammals:	Acute oral LD <sub>50</sub> (rat) 4700 mg as./kg b.w.
Acute toxicity to birds:	Acute oral LD <sub>50</sub> 282 mg/kg bw, Bobwhite quail.
Dietary toxicity to birds:	8-d LD <sub>50</sub> > 5000 ppm MCPB NOEL 1250 ppm (bodyweight gain and food consumption).
Reproductive toxicity to birds:	Not performed for MCPB. For MCPA, NOEL 1000ppm (highest dose tested) bobwhite quail.
Short term oral toxicity to mammals:	NOEL= 13 mg/kg/d (6-week oral rat).

#### Aquatic Organisms

	Species	Test Substance	Time scale	Toxicity expressed as acid (mg/l)	Endpoint
Acute toxicity fish:	<i>Lepomis macrochirus</i>	Technical material (MCPB sodium)	96 h	14	Mortality EC <sub>50</sub>
	<i>Oncorhynchus mykiss</i>	Technical material (MCPB sodium)	96 h	4.3	Mortality EC <sub>50</sub>
	<i>Oncorhynchus mykiss</i>	MCPA DMA Formulation	96 h	41	Mortality EC <sub>50</sub>
Long term toxicity fish:	<i>Oncorhynchus mykiss</i>	MCPA DMA Formulation	28 d	40	NOEC
Bioaccumulation fish:	Not required, K <sub>OW</sub> = 2.79				
Acute toxicity invertebrate:	<i>Daphnia magna</i>	Technical material (MCPB sodium)	48 h	55	EC <sub>50</sub>
Chronic toxicity invertebrate:	<i>Daphnia magna</i>	Technical material (MCPA DMA salt)	21 d	50	Reproduction, NOEC

Chronic toxicity sediment dwelling organism:  Acute toxicity aquatic plants: (for herbicides only)	<i>Selenastrum capricornutum</i>	Technical material (MCPB sodium)	72 h	41	Biomass, E <sub>b</sub> C <sub>50</sub>
	<i>Selenastrum capricornutum</i>	(MCPA DMA Formulation)	72 h	57	Biomass, E <sub>b</sub> C <sub>50</sub>
	<i>Anabaena flos-aquae</i>	Technical material (MCPB sodium)	120 h	>2	EC <sub>50</sub>
	<i>Navicula pelliculosa</i>	Technical material (MCPB sodium)	72 h	1.5	Biomass, E <sub>b</sub> C <sub>50</sub>
	Not Required,				
	<i>Lemna gibba</i>	Technical material	17 d	37	FronDS, E <sub>b</sub> C <sub>50</sub>

## Honeybees

Acute oral toxicity:

48-h LD<sub>50</sub> (MCPB acid) - > 81.83 µg as/bee

Acute contact toxicity:

48-h LD<sub>50</sub> (MCPB acid) - > 100 µg as/bee

## Other arthropod species

Test species			
	Rate (kg.as/ha)	Stage	Effects/Endpoint
<i>Aphidius rhopalosiphi</i>	0.25, 0.5, 1.0, 2.0, 4.0	Adult	50% mortality at 2 kg/ha, 47% at 4 kg/ha Reproduction factor = 0.68 at 4kg/ha, 0.84 at 2kg/ha. LR <sub>50</sub> > 4kg/ha
<i>Typhlodromus pyri</i>	2	Protonymph /adult	Mean Corrected Mortality 34.44% (d 7) Reproductive index 1.049.LR <sub>50</sub> >2kg/ha
<i>Aleochara bilineata</i>	2.25	Adult/ hatchlings	No behavioural effects. Reproductive index = 1.06
<i>Poecilus cupreus</i>	2.25	Adult	Mortality 0%, no effect on food consumption

## Earthworms

Acute toxicity:

D 7, LC <sub>50</sub> = 382 ppm; D 14, LC <sub>50</sub> = 263 ppm.
--

Reproductive toxicity:

Not performed.
----------------

## Soil micro-organisms

Nitrogen mineralization:

MCPB – effect at 10kg/ha, recovered by d 42.
--

Carbon mineralization:

MCPB < 25% effect (28 d) at 10 Kg as/ha.
--

**APPENDIX IIIA****MCPB**

List of studies for which the main submitter has claimed data protection and which during the re-evaluation process were considered as essential for the evaluation with a view to Annex I inclusion.

**B.1 Identity, B.2 Physical and chemical properties, B.3 Data on application and further information, B.4 Proposals for classification and labelling, B.5 Methods of analysis**

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>	<b>Reports<sup>2</sup> on previous use in granting national authorizations</b>
IIA 1.8 (Doc J)	Baxby, M	2002b	Preliminary analysis of 5 batches of 4-(4-Chloro-2-methylphenoxy)butyric acid AHM A H Marks & Company Limited 01/0151 GLP, unpublished	
IIA 1.10, 1.11 (Doc J)	Varcoe, F T	1992	Analysis of Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzo-p-furans in 4-(4-chloro-2-methylphenoxy) butyric acid CAS Number 94-81-5 AHM Triangle Laboratories, USA 21915R GLP, unpublished	
IIA 1.11 (Doc J)	Pryce, A	1992	Investigation of Unidentified Impurity in MCPB Acid (TGAI) AHM A H Marks & Company Limited D92/4 GLP, unpublished	
IIA 1.8, 1.10, 1.11 (Doc J)	Cowlyn, T C	1992	MCPB Preliminary Product Analysis AHM Life Science Research, UK 92/AMS038/0546 GLP, unpublished	
IIA 2.1, 2.2, 2.4, 2.14	Bass R V	1999d	Chemical and Physical Properties of 4-(4-Chloro-2-methylphenoxy) butyric acid AHM A H Marks & Company Limited 99/0074 GLP, unpublished	

<sup>2</sup>. Entries are based on information received from the Notifier(s) and in certain cases Member States. Neither the Commission nor the Member States are responsible for the completeness or validity of this information received.

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>	<b>Reports<sup>2</sup> on previous use in granting national authorizations</b>
IIA 2.1.2	O'Connor, B J; Mullee, D M	2002	MCPB: Determination of Boiling Point Temperature AHM SafePharm Laboratories Ltd UK 1156/023 GLP, unpublished	
IIA 2.3	Tremain, S P	1999a	MCPB: Determination of Vapour Pressure AHM SafePharm Laboratories Ltd 1156/011  GLP, unpublished	
IIA 2.3	Hale, M	2002	Procedure for Calculation of Henry's Law Constant in MCPB AHM A H Marks & Company Limited MH/03/05 Not GLP, unpublished	
IIA 2.4	Bass, R V	1999c	Water Solubility of 4-(4-chloro-2- methylphenoxy) butyric acid AHM A H Marks & Company Limited 99/0072 GLP, unpublished	
IIA 2.4	Baxby, M	2003	Water Solubility of 4-(4-chloro-2- methylphenoxy) butyric acid AHM A H Marks & Company Limited 02/0187 GLP, unpublished	
IIA 2.6, 2.7	Bass, R V	1999a	Solvent Solubility of 4-(4-chloro-2- methylphenoxy) butyric acid AHM A H Marks & Company Limited 99/0069 GLP, unpublished	
IIA 2.8	Bass, R V	1999b	Determination of the partition coefficient of 4-(4-chloro-2-methylphenoxy) butyric acid AHM A H Marks & Company Limited 99/0071 GLP, unpublished	
IIA 2.8	Baxby, M	2003	Determination of the partition coefficient of 4-(4-chloro-2-methylphenoxy) butyric acid at pH 5 AHM A H Marks & Company Limited 02/1826 GLP, unpublished	
IIA 2.9.3	Greenwood, J; Maudsley, L	2003	MCPB: Estimation of the Quantum Yield of Direct Photolysis in Aqueous Solution AHM Covance Laboratories Ltd UK 785/77 GLP, unpublished	

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not	Reports <sup>2</sup> on previous use in granting national authorizations
IIA 2.10	Hutchinson N D	2000	Photochemical Oxidative Degradation of MCPB (SAR Estimation) AHM A H Marks & Company Limited 00/0126 GLP, unpublished	
IIA 2.11	Tremain S P	1999	MCPB: Determination of Hazardous Physico-Chemical Properties AHM SafePharm Laboratories Ltd UK 1156/012 GLP, unpublished	
IIA 4.1.1	Anonymous	2001	Standard Analytical Method Phenoxy Acid Solutions (Single Component) – AI by HPLC AHM A H Marks & Company Limited Method No 443 (Issue 8) Not GLP, unpublished	
IIA 4.1.1	Dawson S M	2001	Standard Analytical Method Phenoxy Acid flake – ai and parent phenol by HPLC AHM A H Marks & Company Limited Method No 442 (Issue 9) Not GLP, unpublished	
IIA 4.1.2 (Doc J)	Cowlyn T C	1992	MCPB Preliminary Product Analysis AHM Life Science Research UK 92/AMS038/0546 GLP, unpublished	
IIA 4.1.2 (Doc J)	Varcoe F T	1992	Analysis of Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzo-p-furans in 4-(4-chloro-2-methylphenoxy) butyric acid CAS Number 94-81-5 AHM Triangle Laboratories USA. 21915R GLP, unpublished	
IIA 4.2.1	Conn R	1990a	Magnitude of the Residue of MCPB in or on Succulent Peas MCPB US Task Force Stewart Agricultural Research Services Inc USA 40755 GLP, unpublished	
IIA 4.2.1	Conn R	1990b	Magnitude of the Residue of MCPB in or on Dried Peas MCPB US Task Force Stewart Agricultural Research Services Inc USA 40757 GLP, unpublished	

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not	Reports <sup>2</sup> on previous use in granting national authorizations
IIA 4.2.1	Manley J D	1995	MCPB and Metabolites: Analytical Method Development for Residues in Peas - Summary of Developmental Work to date (May 1994) and Transmittal Document MCPB US Task Force Rhône-Poulenc Agriculture UK P92/191 Not GLP, unpublished	
IIA 4.2.1	Atkinson, S	2003	Independent Laboratory Validation of an Analytical Method for the Determination of MCPA, HMCPA and MCPB in Peas CEMAS Laboratories UK AHM CEMR 1925 GLP, unpublished	
IIA 4.2.1	Dawson, S	2000	Analytical Method for the Determination of MCPA, HMCPA and MCPB in Cereals and Grass AHM A H Marks & Company Limited ATM 592, Issue 1 Not GLP, unpublished	
IIA 4.2.1	Wasser, C	2001	Validation of Analysis for MCPA, MCPB and HMCPA Residues in Peas AHM Anadiag France R 9113 / AHM R 99 432 GLP, unpublished	
IIA 4.2.2	Mahmood, T	2003	Validation of a method for the analysis of MCPB and MCPA in soil AHM A H Marks & Company Limited R/03/03 GLP, unpublished	
IIA 4.2.4	Bass R V	2000	Validation of the analytical method for the determination of 4-(2,4-dichlorophenoxy)butyric acid (DB) in air AHM A H Marks & Company Limited 00/0118 GLP, unpublished	
IIA 4.2.4	Baxby M	2002	Validation of an analytical method for the determination of 4-(4-chloro-2-methylphenoxy)butyric acid (MCPB) in air AHM A H Marks & Company Limited 02/0177 GLP, unpublished	
IIA 4.2.5	King D L. Johnson T	2001	Validated Analytical Method for the Determination of MCPA, MCPA glycine conjugate, HMCPA and HMCPA glucose conjugate in beef tissues, milk and cream. MCPA DPWG PTRL USA 2117 GLP, unpublished	

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>	<b>Reports<sup>2</sup> on previous use in granting national authorizations</b>
IIIA 2.1, 2.4, 2.5, 2.6, 2.7.2, 2.8	Bass R V	1999	The Chemical and Physical Properties of MCPB Na salt solution at 400 g/l <sup>-1</sup> MCPB acid concentration AHM A H Marks & Company Limited 99/0081 GLP, unpublished	
IIIA 2.3	Bass R V	2000	Determination of the Flash Points of MCPB Na 400 and DB Na 400 AHM A H Marks & Company Limited 00/0125 GLP, unpublished	
IIIA 2.7.1	Bass R V	2000	Thermal Stability of Butoxone AHM A H Marks & Company Limited 00/0101 GLP, unpublished	
IIIA 2.7.1	Baxby, M	2003	Low Temperature Stability of MCPB Na 400 AHM A H Marks & Company Limited 02/0185 GLP, unpublished	
IIIA 2.7.3	Baxby M	2002a	Two Year Storage Stability of MCPB as the sodium salt at 400 g l <sup>-1</sup> Al AHM A H Marks & Company Limited 00/0119 GLP, unpublished	
IIIA 2.7.3	Baxby, M	2003	Determination of pH During Accelerated Storage Stability MCPB Na 400 AHM A H Marks & Company Limited 02/0184 GLP, unpublished	

**B.6 Toxicology and metabolism**

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>	<b>Reports on previous use in granting national authorizations</b>
--	------------------	-------------	--	--

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>	<b>Reports on previous use in granting national authorizations</b>
IIA 5.1	Thornley K	1998	( <sup>14</sup> C)-MCPB: A study of absorption, distribution, metabolism and excretion following oral administration to the rat AHM Covance Laboratories Ltd UK 785/10-D1141 GLP, unpublished	
IIA 5.4	Clay P	2002	MCPB Technical Acid: Mouse Bone Marrow Micronucleus Test AHM Central Toxicology Laboratory UK CTL/SM1134 GLP, unpublished	
IIA 5.8	Hardwick T	1999	( <sup>14</sup> C)-MCPA: Absorption and excretion in the beagle dog MCPA DPWG Covance Laboratories, UK 729/197-D1141 GLP, unpublished	
IIA 5.8	Hardwick T	2000a	( <sup>14</sup> C)-MCPA: Metabolite profiles in the beagle dog MCPA DPWG Covance Laboratories UK 729/201-D1141 GLP, unpublished	
IIA 5.8	Pigott G H van Ravenzwaay B	2000	MCPA: Interspecies Comparison of Metabolism MCPA DPWG MCPA Task Force III (no report number) Not GLP, unpublished	
IIA 5.8	Timchalk, C	2003	Lack of Relevance of Toxicity Findings in Dogs for Assessment of Potential Human Health Risks of 2,4-D: A White Paper by the Industry Task Force II on 2,4-D Research Data, Battelle Pacific Northwest Laboratory Not GLP, unpublished	
IIA 5.9	Burgess J S	1998	A survey of workers exposed to phenoxy herbicides AHM Cavell & Lind Ltd Not GLP, unpublished	
IIIA 7.1.1	McRae L A	1995a	MCPB Na 400g/l Acute oral toxicity to the rat AHM Huntingdon Research Centre UK AHM 76/951034/AC GLP, unpublished	

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not	Reports on previous use in granting national authorizations
IIIA 7.1.2	McRae L A	1995b	MCPB Na 400g/l Acute dermal toxicity to the rat AHM Huntingdon Research Centre UK AHM 77/950813/AC GLP, unpublished	
IIIA 7.1.4	Parcell B I	1995a	MCPB Na 400g/L skin irritation to the rabbit AHM Huntingdon Research Centre Ltd UK AHM 78/950840/SE GLP, unpublished	
IIIA 7.1.5	Parcell B I	1995b	MCPB Na 400g/l Eye irritation to the rabbit AHM Huntingdon Research Centre Ltd UK AHM 79/950839/SE GLP, unpublished	
IIIA 7.3	Beimborn, D Leibold, E	2003	( <sup>14</sup> C)-MCPB: Study of Dermal Absorption in Rats BASF Aktiengesellschaft 01/B0416/026012 GLP, unpublished	
IIIA 7.3	Davies, D J	2003	MCPB 400 g/l Formulation: <i>In vitro</i> Absorption through Rat and Human Epidermis Central Toxicology Laboratory, Macclesfield, Cheshire, UK CTL/JV1717 GLP, unpublished	

### B.7 Residue data

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not	Reports on previous use in granting national authorizations
IIA 6.1	Conn R L	1990a	Magnitude of the Residue of MCPB in or on Succulent Peas MCPB US Task Force Stewart Ag USA 40755 GLP, unpublished	
IIA 6.1	Conn R L	1990b	Magnitude of the Residue of MCPB in or on Dry Peas MCPB US Task Force Stewart Ag USA 40757 GLP, unpublished	
IIA 6.3	Anderson I; Old J	2001	MCPB Sodium Salt Residue Decline in Peas in Northern Europe: Field Phase AHM Inveresk Research UK 18199 / AHM R 99 402 GLP, unpublished	

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>	<b>Reports on previous use in granting national authorizations</b>
IIA 6.3	Gallais C	2002b	Residue decline of MCPB Sodium salt in Peas in Northern Europe AHM Anadiag France R 9122 / AHM R 99 422 GLP, unpublished	
IIA 6.3	Wasser C:	2001	Validation of analysis for MCPA, MCPB and HMCPA residues in peas AHM Anadiag France AHM R 99 432 GLP, unpublished	
IIA 6.3	Gallais C:	2002c	Storage Stability of MCPA, MCPB and HMCPA residues in Peas AHM Anadiag France AHM R 99 442 GLP, unpublished	
IIA 6.3	Old J; Duncan P; Livingstone K	2001	MCPB Sodium Salt (Butoxone W1301A(R)) Residue Decline in Peas in Northern Europe: Field Phase AHM Inveresk Research UK 19494 / AHM R 00 402 GLP, unpublished	
IIA 6.3	Gallais C	2002a	Residue Decline on MCPB Sodium Salt in Peas in Northern Europe AHM Anadiag France R A1139 / AHM R 00 422 GLP, unpublished	
IIA 6.8	Wilson, R D	2000	Summary of the Transferable Turf Residues from the Applications of Various Forms of Phenoxy Herbicides BTF TFR Task Force John Wise & Associates Ltd, USA Not GLP, unpublished	

**B.8 Environmental fate and behaviour**

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>	<b>Reports on previous use in granting national authorizations</b>
IIA 7.1	Ferreira E M et al	1994	MCPB Soil Photolysis Study MCPB US Task Force Rhône-Poulenc Agriculture UK P92126 GLP, unpublished	
IIA 7.1.	John, A E, et al	1994	MCPB Aerobic Soil Metabolism MCPB US Task Force Rhône-Poulenc Agriculture, UK P93/194 GLP, unpublished	
IIA 7.1.1.2.1	Matt, F J	1990	Aerobic and Aerobic/Anaerobic Soil Metabolism of <sup>14</sup> C-MCPA, MCPA DPWG Hazleton Laboratories America HLA 6237- 107 GLP, unpublished	
IIA 7.1.2; 7.1.3	Goodwin, P A; Laskowski, D A	1988	An Adsorption Study of MCPA MCPA DPWG Dow Chemical Company, USA GH-C 1995 GLP, unpublished	
IIA 7.1.2; 7.1.3	Fernando, T R	1992	Sorption/Desorption of <sup>14</sup> C-MCPA Acid on Soils by the Batch of Equilibrium method MCPA DPWG Battelle Memorial Institute, USA SC910081 GLP, unpublished	
IIA 7.1.3	John, A E, Jones, MK and Lowden, P	1994	MCPB: Fresh and Aged Leaching Study in Five Soils MCPB US Task Force Rhone-Poulenc, UK RPAL P92/333 GLP, unpublished	
IIA 7.2	Van Dijk, N R M	2003	Determination of [ <sup>14</sup> C]-MCPB in aerobic water/sediment systems AHM TNO Chemistry, Netherlands V4985 GLP, unpublished	
IIA 7.2.1.3.2	Cremers, R K H; Salmon-te Rietstap, F	2003	Determination of Degradation of MCPA using [ <sup>14</sup> C]-MCPA in two water/sediment systems MCPA DPWG TNO Netherlands V4022/01 GLP, unpublished	
IIA 7.2.2; IIIA 9.3	Ackroyd C	2001	Photochemical oxidation of degradation of MCPB (SAR estimation) AHM A H Marks and Company Limited, Bradford, Yorkshire, UK 01/0161 GLP, unpublished	

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not	Reports on previous use in granting national authorizations
IIA 7.3	Mackay N	1996	The Predicted Environmental Concentrations of MCPB in Soil, Air, Surface Water and Sediment AHM Corning Hazleton Laboratories UK 1149/019/PEC-1 Not GLP, unpublished	
IIIA 9.2.1	Garratt, J	2003	The potential for leaching by the pesticide MCPB and its metabolite MCPA: simulations with FOCUS-PELMO 3.3.2 AHM Enviresearch, UK E-2003-04 Not GLP, unpublished	

### B.9 Ecotoxicology

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not	Reports on previous use in granting national authorizations
IIA 8.2.8	Albuquerque, R; Billing, R	2003	MCPB 400 g/l Aqueous Formulation Higher Plant ( <i>Lemna</i> ) Growth Inhibition Test AHM Huntingdon Life Sciences Ltd, UK AHM/149/023828 GLP, Unpublished	
IIA 8.3.1	Wainwright, M	2002	MCPB Technical Acid Acute Toxicity to Honey Bees AHM Huntingdon Life Sciences, UK AHM 151/023979 GLP, Unpublished	
IIA 8.3.2	Adelberger I	1999	MCPA DMA: Toxicity to the Predatory Mite, <i>Typhlodromus pyri</i> SCHEUTEN (Acari, Phytoseiidae) in the Laboratory MCPA DPWG GAB Biotechnologie, Germany 99038/01-NLp GLP, unpublished	
IIA 8.3.2	Kemmeter F	1999a	MCPA DMA: Toxicity to the Green Lacewing, <i>Chrysoperla carnea</i> Steph (Neuroptera, Chrysopidae) in the Laboratory MCPA DPWG GAB Biotechnologie, Germany 99038/02-NLcc GLP, unpublished	

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not	Reports on previous use in granting national authorizations
IIA 8.3.2	Kemmeter F	1999b	MCPA DMA: Toxicity to the Wolf Spider, <i>Pardosa spp</i> (Araneae Lycosidae) in the Laboratory MCPA DPWG GAB Biotechnologie, Germany 99038/01-NLPa GLP, unpublished	
IIA 8.3.2	Schuld M	1999a	MCPA DMA: Toxicity to the Aphid Parasitoid <i>Aphidius rhopalosiphi</i> (Hymenoptera, Braconidae) DeStefani-Perez in the Laboratory MCPA DPWG GAB Biotechnologie, Germany 99038/01-NLAp GLP, unpublished	
IIA 8.3.2	Schuld M	1999b	MCPA DMA: Toxicity to the Aphid Parasitoid <i>Aphidius rhopalosiphi</i> (Hymenoptera, Braconidae) Using an Extended Laboratory Test MCPA DPWG GAB Biotechnologie, Germany 99038/01-NEAp GLP, unpublished	
IIA 8.4	Cameron, D M; Fisher, E R	2002	MCPB Technical Acid Acute Toxicity (LC <sub>50</sub> ) to the Earthworm ( <i>Eisenia foetida</i> ) AHM Huntingdon Life Sciences, England AHM 150/024038 GLP, unpublished	
IIA 8.5	Reis, K-H	2003	Effects of MCPB on the activity of Soil Microflora in the Laboratory AHM Ibacon GmbH, Germany 15695080 GLP, unpublished	
IIA 8.7	Hertl, J	2003	Toxicity of MCPB to Activated Sludge in a Respiration Inhibition Test AHM Ibacon GmbH Germany 15694171 GLP, unpublished	
IIA 8.9	Coomb H	2001	Phenoxy Herbicide MCPA Activated Sludge – Respiration Inhibition Test MCPA DPWG Huntingdon Life Sciences UK TFT 001/004836 GLP, unpublished	
IIIA 10.2.1	Albuquerque, R; Billing, R	2003	MCPB 400 g/l Aqueous Formulation Algal Growth Inhibition Assay ( <i>Selenastrum capricornutum</i> ) AHM Huntingdon Life Sciences Ltd, UK AHM 147/023375 GLP, unpublished	

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not	Reports on previous use in granting national authorizations
IIIA 10.2.1	Albuquerque, R; Firth, K	2003	MCPB 400 g/l Aqueous Formulation Algal Growth Inhibition Assay ( <i>Navicula pelliculosa</i> ) AHM Huntingdon Life Sciences Ltd, UK AHM 148/024534 GLP, unpublished	
IIIA 10.3	Wyness, L	2002	MCPB Risk Assessment for birds and mammals AHM TGSE Europe 1-4-1 Not GLP, unpublished	
IIIA 10.5	Chapman, A	2003a	MCPB Na 400 g/L ai Acute toxicity to <i>Typhlodromus pyri</i> in the Laboratory AHM Huntingdon Life Sciences Ltd UK AHM 153/032317 GLP, unpublished	
IIIA 10.5	Chapman, A	2003b	MCPB Na 400 g/L ai Acute toxicity to <i>Aphidius rhopalosiphi</i> in the Laboratory AHM Huntingdon Life Sciences Ltd UK AHM 152/032103 GLP, unpublished	
IIIA 10.5	Goßmann A	1995	Effects of MCPB Sodium 400 g/l on the reproduction of rove beetles <i>Aleochara bilineata</i> Gyll. (Coleoptera, Staphylinidae) in the laboratory IBACON GmbH, Germany 973071 GLP, unpublished	
IIIA 10.5	Klepka S, Groer M	1995	Effects of MCPB Sodium 400 g/l on the carabid beetle <i>Poecilus cupreus</i> L (Coleoptera, Carabidae) in the laboratory IBACON GmbH, Germany 972007 GLP, unpublished	

\* MCPB US TF = MCPB US Task Force – member companies identified as AHM = A H Marks & Company Limited, UK and RP Rhone-Poulenc

# MCPA DPWG = MCPA Dossier Preparation Working Group – member companies identified as:  
AHM = A H Marks & Company Limited, UK  
BASF = BASF Aktiengesellschaft, Germany  
DAG = Dow AgroSciences, Europe  
NUF = Nufarm Ltd

\*\* US BTF TFR Task Force = Broadleaf Turf Herbicide Transferable Foliar Residues Task Force – member companies identified as:  
AHM = A H Marks & Company Limited, UK  
BASF = BASF Aktiengesellschaft, Germany  
DAG = Dow AgroSciences, Europe  
NUF = Nufarm Ltd  
PBI = PBI Gordon Inc, USA

**APPENDIX IIIB****MCPB**

List of studies, which were submitted during the evaluation process and were not cited in the draft assessment report, or for which the main submitter has not claimed data protection:

**B.1 Identity, B.2 Physical and chemical properties, B.3 Data on application and further information, B.4 Proposals for classification and labelling, B.5 Methods of analysis**

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>
IIA 1.8 (Doc J)	Baxby, M	2002b	Preliminary analysis of 5 batches of 4-(4-Chloro-2-methylphenoxy)butyric acid AHM A H Marks & Company Limited 01/0151 GLP, unpublished
IIA 2.1, 2.2, 2.4, 2.14	Bass R V	1999d	Chemical and Physical Properties of 4-(4-Chloro-2-methylphenoxy) butyric acid AHM A H Marks & Company Limited 99/0074 GLP, unpublished
IIA 2.1.2	O'Connor, B J; Mullee, D M	2002	MCPB: Determination of Boiling Temperature AHM Safepharm Laboratories Limited, UK 1156/023 GLP, unpublished
IIA 2.3	Hale, M	2002	Procedure for Calculation of Henry's Law Constant in MCPB AHM A H Marks & Company Limited MH/03/05 Not GLP, unpublished
IIA 2.4	Baxby, M	2003	Water Solubility of 4-(4-chloro-2-methylphenoxy) butyric acid AHM A H Marks & Company Limited 02/0187 GLP, unpublished
IIA 2.8	Baxby, M	2003	Determination of the partition coefficient of 4-(4-chloro-2-methylphenoxy) butyric acid at pH 5 AHM A H Marks & Company Limited 02/1826 GLP, unpublished

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not
IIA 2.9.3	Greenwood, J; Maudsley, L	2003	MCPB: Estimation of the Quantum Yield of Direct Photolysis in Aqueous Solution AHM Covance Laboratories Ltd UK 785/77 GLP, unpublished
IIA 2.10	Ackroyd C	2001	Photochemical Oxidative Degradation of MCPB (SAR Estimation) AHM A H Marks & Company Limited 01/0161 GLP, unpublished
IIA 3.1	Wain, R L	1955	A New Approach to Selective Weed Control Wye College University of London UK <i>The Annals of Applied Biology</i> Vol. 42 151-157 1955 Not GLP, published
IIA 3.1	Fawcett, C H et al	1958	Plant growth-regulating activity in homologous series of $\omega$ - phenoxy alkanecarboxylic acids and the influence of any substitution on their breakdown by $\beta$ -oxidation within plant tissues Wye College University of London UK No publication details Not GLP, published
IIA 3.1	Hassall, K A	1982	The Chemistry of Pesticides. Their metabolism, mode of action and uses in Crop Protection - Herbicides Applied to Foliage <i>The Chemistry of Pesticides</i> Verlag Chemie, Weinheim, Deerfeld Beach Florida, USA - Basel 1982 Not GLP, published
IIA 4.1.1	Dawson, S M	2001	Standard Analytical Method Phenoxy Acid Solutions (Single Component) – AI by HPLC AHM A H Marks & Company Limited Method No 443 (Issue 8) Not GLP, unpublished
IIA 4.1.1	Dawson S M	2001	Standard Analytical Method Phenoxy Acid flake – ai and parent phenol by HPLC AHM A H Marks & Company Limited Method No 442 (Issue 9) Not GLP, unpublished
IIA 4.2.1	Atkinson, S	2003	Independent Laboratory Validation of an Analytical Method for the Determination of MCPA, HMCPA and MCPB in Peas AHM CEMAS Laboratories UK CEMR 1925 GLP, unpublished
IIA 4.2.1	Dawson, S	2000	Analytical Method for the Determination of MCPA, HMCPA and MCPB in Cereals and Grass AHM A H Marks & Company Limited ATM 592, Issue 1 Not GLP, unpublished

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>
IIA 4.2.1	Wasser, C	2001	Validation of Analysis for MCPA, MCPB and HMCPA Residues in Peas AHM Anadiag France R 9113 / AHM R 99 432 GLP, unpublished
IIA 4.2.2	Mahmood, T	2003	Validation of a method for the analysis of MCPB and MCPA in soil AHM A H Marks & Company Limited R/03/03 GLP, unpublished
IIA 4.2.4	Baxby M	2002	Validation of an analytical method for the determination of 4-(4-chloro-2-methylphenoxy)butyric acid (MCPB) in air AHM A H Marks & Company Limited 02/0177 GLP, unpublished
IIIA 2.7.1	Baxby, M	2003a	Low Temperature Stability of MCPB Na 400 AHM A H Marks & Company Limited 02/0185 GLP, unpublished
IIIA 2.7.3	Baxby M	2002a	Two Year Storage Stability of MCPB as the sodium salt at 400 g l <sup>-1</sup> AI AHM A H Marks & Company Limited 00/0119 GLP, unpublished
IIIA 2.7.3	Baxby, M	2003b	Determination of pH During Accelerated Storage Stability MCPB Na 400 AHM A H Marks & Company Limited 02/0184 GLP, unpublished

### B.6 Toxicology and metabolism

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>
IIA 5.1	Breusch, F L	1948	The Biochemistry of Fatty Acid Catabolism not applicable <i>Advances in Enzymology</i> Volume VIII Ed. FF Nord Interscience Publishers Inc (page 343) 1948 Not GLP, published
IIA 5.1	Bache, C A et al	1964	Elimination of 2-Methyl-4-Chlorophenoxyacetic Acid and 4-(2-Methyl-4-Chlorophenoxy)butyric Acid in the urine from cows Departments of Entomology and Animal Husbandry Cornell University Ithaca USA <i>J. Dairy Sc.</i> 47 pages 93-95 1964 Not GLP, published

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not
IIA 5.1	Van Peteghem, C H et al	1975	Beta Oxidation of Chlorophenoxybutyric Acid Herbicides in Guinea Pigs <i>Bulletin of Environmental Contamination &amp; Toxicology</i> 14 (5) pages 632-640 1975 Not GLP, published
IIA 5.4	Clay P	2002	MCPB Technical Acid: Mouse Bone Marrow Micronucleus Test Central Toxicology Laboratory UK CTL/SM1134 GLP, unpublished
IIA 5.5	Takagi S	1990	Chronic toxicity of 2-methyl-4-chlorophenoxyacetic acid (MCPA) in mice <i>Tohoku J. Exp. Med.</i> 160 pages 97-107 1990 Not GLP, published
IIA 5.8	Hardwick T	2000a	( <sup>14</sup> C)-MCPA: Metabolite profiles in the beagle dog MCPA DPWG Covance Laboratories UK 729/201-D1141 GLP, unpublished
IIA 5.8	Lappin, G J; Hardwick, T; Stow, R; Pigott, G H; van Ravenzwaay, B	2002	Absorption, metabolism and excretion of 4-chloro-2- methylphenoxyacetic acid (MCPA) in rat and dog <i>Xenobiotica</i> Vol 32 No 2 pages 153-163 Not GLP, published
IIA 5.8	Timchalk, C	2003	Lack of Relevance of Toxicology Findings in Dogs for Assessment of Potential Human Health Risks of 2,4-D: A White Paper by the Industry Task Force II on 2,4-D Research Data Battelle Pacific Northwest Laboratory, USA 2,4-D Task Force II Not GLP, unpublished
IIA 5.9	Coggon, D et al	1991	Mortality and incidence of cancer at four factories making phenoxy herbicides MRC Environmental Epidemiology Unit, University of Southampton, UK <i>British Journal of Industrial Medicine</i> 48, pages 173-178 Not GLP, published
IIIA 7.3	Beimborn, D Leibold, E	2003	( <sup>14</sup> C)-MCPB: Study of Dermal Absorption in Rats BASF Aktiengesellschaft 01/B0416/026012 GLP, unpublished
IIIA 7.3	Davies, D J	2003	MCPB 400 g/l Formulation: In vitro Absorption through Rat and Human Epidermis Central Toxicology Laboratory, Macclesfield, Cheshire, UK CTL/JV1717 GLP, unpublished

**B.7 Residue data**

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>
IIA 6.1	Bache C A et al	1964	Elimination of 2-Methyl-4-Chlorophenoxyacetic Acid and 4-(2-methyl-4-chlorophenoxy)butyric Acid in the Urine from Cows Cornell University USA <i>Journal of Dairy Science</i> 47: pages 93-95 1964 Not GLP, published
IIA 6.1	Bjerke E L; Herman J L; Miller P W; Wetters J H	1972	Residue Study of Phenoxy Herbicides in Milk and Cream Not GLP, published: <i>J. Agr Food Chem</i> Vol. 20 No. 5 1972 Not GLP, published
IIA 6.1	Fawcett C H; Pascal R M; Pybus M B; Taylor H F; Wain R L; Wightman F	1958	Plant growth-regulating activity in homologous series of $\omega$ -phenoxy alkanecarboxylic acids and the influence of any substitution on their breakdown by $\beta$ -oxidation within plant tissues Wye College University of London UK University of London pages 95 to 119, 1958 Not GLP, published
IIA 6.1	Hassall K A	1982	The Chemistry of Pesticides Their Metabolism, Mode of Action and Uses in Crop Protection <i>Verlag Chemie</i> pages 262 to 270 1982 Not GLP, published
IIA 6.3	Anderson I; Old J	2001	MCPB Sodium Salt Residue Decline in Peas in Northern Europe: Field Phase AHM Inveresk Research UK 18199 /AHM R 99 402 GLP, unpublished
IIA 6.3	Gallais C	2002b	Residue decline of MCPB Sodium salt in Peas in Northern Europe AHM Anadiag France R A1139 / AHM R 99 422 GLP, unpublished
IIA 6.3	Wasser C:	2001	Validation of analysis for MCPA, MCPB and HMCPA residues in peas AHM Anadiag France AHM R 99 432 GLP, unpublished
IIA 6.3	Gallais C:	2002c	Storage Stability of MCPA, MCPB and HMCPA residues in Peas AHM Anadiag France 9124 / AHM R 99 442 GLP, unpublished
IIA 6.3	Old J; Duncan P; Livingstone K	2001	MCPB Sodium Salt (Butoxone W1301A(R)) Residue Decline in Peas in Northern Europe: Field Phase AHM Inveresk Research UK 19494 / AHM R 00 402 GLP, unpublished
IIA 6.3	Gallais C	2002a	Residue Decline on MCPB Sodium Salt in Peas in Northern Europe AHM Anadiag France report R A 1139 AHM R 00 422 GLP, unpublished

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>
IIA 6.8	Wilson, R D	2000	Summary of the Transferable Turf Residues from the Applications of Various Forms of Phenoxy Herbicides BTF TFR Task Force John Wise & Associates Ltd, USA Not GLP, unpublished
IIA 6.5	Leng M	1972	Residues in milk and meat and safety to livestock from the use of phenoxy herbicides in pasture and rangeland <i>Down to Earth</i> Vol 28 No. 1 pages 12-20 1972 Not GLP, published:

### B.8 Environmental fate and behaviour

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>
IIA 7.1	Gutenmann W H; Loos M A; Alexander M; Lisk D J	1964	Beta Oxidation of Phenoxyalkanoic Acids in Soil <i>Soil Science Society Proceedings</i> pages 205-207 1964 Not GLP, published
IIA 7.1	Smith, A E; Hayden, B J	1989	Relative persistence of MCPA, MCPB and mecoprop in Saskatchewan soils, and the identification of MCPA in MCPA-treated soils <i>Weed Research</i> Volume 21 pages 179-183, 1989 Not GLP, published
IIA 7.1	Smith, A E	1989	Degradation, Fate, and Persistence of Phenoxyalkanoic Acid Herbicides in Soil <i>Rev. Weed Sci.</i> 4:1-24, 1989 Not GLP, published
IIA 7.1.1.2.1	Matt, F J	1990	Aerobic and Aerobic/Anaerobic Soil Metabolism of <sup>14</sup> C-MCPA, MCPA DPWG Hazleton Laboratories America HLA 6237-107 GLP, unpublished
IIA 7.1.2; 7.1.3	Goodwin, P A; Laskowski, D A	1988	An Adsorption Study of MCPA Dow Chemical Company, USA MCPA DPWG GH-C 1995 GLP, unpublished
IIA 7.1.2; 7.1.3	Fernando, T R	1992	Sorption/Desorption of <sup>14</sup> C-MCPA Acid on Soils by the Batch of Equilibrium method Battelle Memorial Institute, USA MCPA DPWG SC910081 GLP, unpublished

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>
IIA 7.2	Van Dijk, N R M	2003	Determination of [ <sup>14</sup> C]-MCPB in aerobic water/sediment systems AHM TNO Chemistry, Netherlands V4985 GLP, unpublished
IIA 7.2.1.3.2	Cremers, R K H; Salmon-te Rietstap, F	2003	Determination of Degradation of MCPA using [ <sup>14</sup> C]-MCPA in two water/sediment systems MCPA DPWG TNO Netherlands V4022/01 GLP, unpublished
IIA 7.2.2; IIIA 9.3	Ackroyd C	2001	Photochemical oxidation of degradation of MCPB (SAR estimation) AHM A H Marks and Company Limited, Bradford, Yorkshire, UK 01/0161 GLP, unpublished
IIIA 9.2.1	Garratt, J	2003	The potential for leaching by the pesticide MCPB and its metabolite MCPA: simulations with FOCUS-PELMO 3.3.2 AHM Enviresearch, UK E-2003-04 Not GLP, unpublished

### B.9 Ecotoxicology

<b>Annex point/ reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not</b>
IIA 8.2.8	Albuquerque, R; Billing, R	2003	MCPB 400 g/l Aqueous Formulation Higher Plant ( <i>Lemna</i> ) Growth Inhibition Test AHM Huntingdon Life Sciences Ltd., UK AHM/149/023828 GLP, Unpublished
IIA 8.3.1	Wainwright, M	2002	MCPB Technical Acid Acute Toxicity to Honey Bees AHM Huntingdon Life Sciences, UK AHM 151/023979 GLP, Unpublished
IIA 8.4	Cameron, D M; Fisher, E R	2002	MCPB Technical Acid Acute Toxicity (LC50) to the Earthworm ( <i>Eisenia foetida</i> ) AHM Huntingdon Life Sciences, England AHM 150/024038 GLP, unpublished

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not
IIA 8.5	Reis, K-H	2003	Effects of MCPB on the activity of Soil Microflora in the Laboratory AHM Ibacon GmbH, Germany 15695080 GLP, unpublished
IIA 8.7	Hertl, J	2003	Toxicity of MCPB to Activated Sludge in a Respiration Inhibition Test AHM Ibacon GmbH Germany 15694171 GLP, unpublished
IIA 8.9	Coomb H	2001	Phenoxy Herbicide MCPA Activated Sludge – Respiration Inhibition Test MCPA DPWG Huntingdon Life Sciences UK TFT 001/004836 GLP, unpublished
IIIA 10.1	Pederson, C A Helsten, B R	1992	MCPB Sodium: 14-day acute oral LD <sub>50</sub> study in Bobwhite quail MCPB US Task Force Bio-Life Associates Ltd, USA BLAL 108-016-03 GLP, unpublished
IIIA 10.1	Pedersen C A, Helsten B R	1993a	MCPB Sodium: 8-day acute dietary LD <sub>50</sub> study in Bobwhite quail MCPB US Task Force Bio-Life Associates Ltd, USA BLAL 108-014-01 GLP, unpublished
IIIA 10.1	Pedersen C A, Helsten B R	1993b	MCPB Sodium: 8-day acute dietary LD <sub>50</sub> study in Mallard Ducklings MCPB US Task Force Bio-Life Associates Ltd, USA BLAL 108-015-02, 22 GLP, unpublished
IIIA 10.2.1	Albuquerque, R; Billing, R	2003	MCPB 400 g/l Aqueous Formulation Algal Growth Inhibition Assay ( <i>Selenastrum capricornutum</i> ) AHM Huntingdon Life Sciences Ltd, UK AHM 147/023375 GLP, unpublished
IIIA 10.2.1	Albuquerque, R; Firth, K	2003	MCPB 400 g/l Aqueous Formulation Algal Growth Inhibition Assay ( <i>Navicula pelliculosa</i> ) AHM Huntingdon Life Sciences Ltd, UK AHM 148/024534 GLP, unpublished
IIIA 10.3	Wyness, L	2002	MCPB Risk Assessment for birds and mammals AHM TGSE Europe 1-4-1 Not GLP, unpublished
IIIA 10.5	Chapman, A	2003a	MCPB Na 400 g/L ai Acute toxicity to <i>Typhlodromus pyri</i> in the Laboratory AHM Huntingdon Life Sciences Ltd UK AHM 153/032317 GLP, unpublished

Annex point/ reference number	Author(s)	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or not
IIIA 10.5	Chapman, A	2003b	MCPB Na 400 g/L ai Acute toxicity to <i>Aphidius rhopalosiphi</i> in the Laboratory AHM Huntingdon Life Sciences Ltd UK AHM 152/032103 GLP, unpublished
IIIA 10.5	Goßmann A	1995	Effects of MCPB Sodium 400 g/l on the reproduction of rove beetles <i>Aleochara bilineata</i> Gyll. (Coleoptera, Staphylinidae) in the laboratory AHM IBACON GmbH, Germany 973071 GLP, unpublished
IIIA 10.5	Klepka S, Groer M	1995	Effects of MCPB Sodium 400 g/l on the carabid beetle <i>Poecilus cupreus</i> L (Coleoptera, Carabidae) in the laboratory AHM IBACON GmbH, Germany 972007 GLP, unpublished

## APPENDIX IV

## List of uses supported by available data

## MCPB

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/ha min max	water l/ha min max	kg as/ha min max		
Peas	Belgium	Gorsac	F	Weeds	SL	400 g/l	Overall spray	Before start of flowering	1	N/A	0.005-0.018	100 – 400	1.80	N/A/	
Peas	UK	Butoxone	F	Weeds	SL	400 g/l	Overall spray	15 cm high	1	N/A	0.003 – 0.007	300 - 600	2.00	N/A/	

- 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