



## EUROPEAN COMMISSION

HEALTH & CONSUMER PROTECTION DIRECTORATE-GENERAL

Directorate E – Food Safety: plant health, animal health and welfare, international questions

**E1 - Plant health**

alpha-Cypermethrin

SANCO/4335/2000 final

13 February 2004

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

Review report for the active substance **alpha-cypermethrin**

Finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on

**13 February 2004**

in view of the inclusion of alpha-cypermethrin 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 alpha-cypermethrin, 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. Alpha-Cypermethrin 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, Cyanamid International (now BASF) on 25 June 1993, Industrias Afrasa on 27 July 1993, United Phosphorus Ltd on 26 July 1993, Gharda Chemicals Ltd on 19 July 1993, FMC Europe NV on 27 September 1993 and Portman Agrochemicals on 26 July 1993 notified to the Commission of their wish to secure the inclusion of the active substance alpha-cypermethrin 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

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<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.

2230/95<sup>(4)</sup>, designated Belgium as rapporteur Member State to carry out the assessment of alpha-cypermethrin on the basis of the dossiers submitted by the notifiers. In the same Regulation, the Commission 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 alpha-cypermethrin this deadline was 30 April 1996.

Only Cyanamid International submitted in time a dossier to the rapporteur Member State which did not contain substantial data gaps, taking into account the supported uses. Therefore Cyanamid International was considered to be the main data submitter

In accordance with the provisions of Article 7(1) of Regulation (EEC) No 3600/92, Belgium submitted on 01 February 2000 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 alpha-cypermethrin 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 alpha-cypermethrin from Cyanamid International, on 10 May 2001.

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 Cyanamid International being the main data submitter, on 20 April 2000.

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 January to July 2001.

The report of the peer review (i.e. full report) was circulated, for further consultation, to Member States on 27 June 2001 and the main data submitter on 25 August 2001 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 September 2003 to February 2004, and was finalised in the meeting of the Standing Committee on 13 February 2004.

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

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 2004/58/EC<sup>5</sup> concerning the inclusion of alpha-cypermethrin in Annex I to Directive 91/414/EEC, and to assist the Member States in decisions on individual plant protection products containing alpha-cypermethrin 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 alpha-cypermethrin 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 alpha-cypermethrin containing plant protection product for which Member States will grant or review the authorisation.

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<sup>5</sup> OJ No L120, 24.4.2004, p.26.

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 0.58 % of the Acceptable Daily Intake (ADI), based on the FAO/WHO European Diet (August 1994). Estimates of acute dietary exposure of adults and toddlers revealed that the Acute Reference Dose (ARfD) would not be exceeded ( for relevant commodities (cabbage, wheat) : 2.83 % or 3.7 % for respectively adults or children". Additional intake from water and products of animal origin is 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 alpha-cypermethrin are given in Appendix I.

No FAO specification is available for this active substance.

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

In accordance with the provisions of Article 13(5) of Directive 91/414/EEC, Belgium is also satisfied, on the basis of the information currently available, that the substances notified by the other data submitters (Gharda Chemical Ltd) do not, in the meaning of Article 13(2) and (5) of the Directive, differ significantly in degree of purity and nature of impurities from the composition registered in the dossier submitted by the main data submitter.

#### **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 alpha-cypermethrin**

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 must pay particular attention to the protection of aquatic organisms, bees and non-target arthropods and must ensure that the conditions of authorisation include risk mitigation measures.

Member States must pay particular attention to the operator safety and must ensure that the conditions of authorisation include appropriate protective 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 alpha-cypermethrin 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. As for other pyrethroids, confirmatory data to further address concerns related to potential developmental neurotoxicity should be generated, when internationally agreed testing protocols are available.

## **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

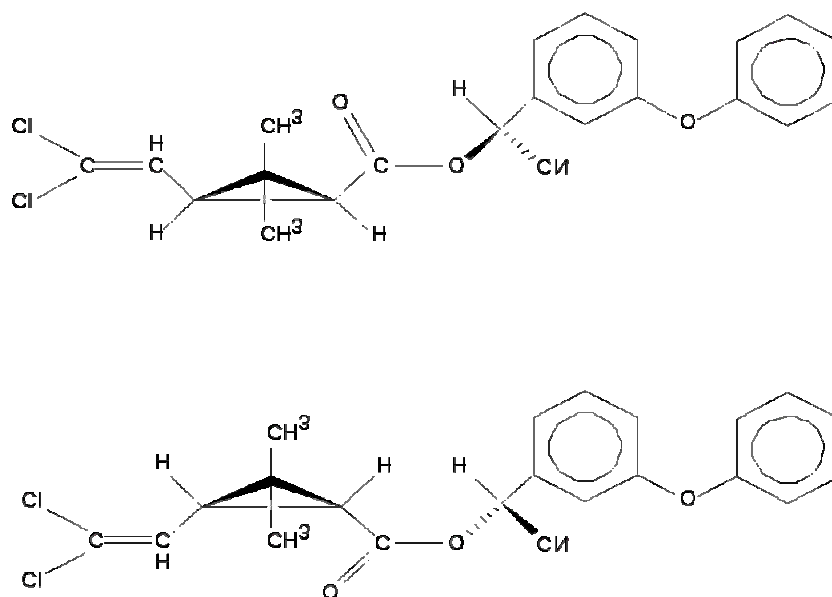
Committee on the Food Chain and Animal Health, in connection with any amendment of the inclusion conditions for alpha-cypermethrin in Annex I of the Directive.

# APPENDIX I

## Identity, physical and chemical properties

### ALPHA-CYPERMETHRIN

<b>Common name (ISO)</b>	ALPHA-CYPERMETHRIN
<b>Chemical name (IUPAC)</b>	Racemate comprising (S)- $\alpha$ - cyano-3 phenoxybenzyl-(1R)-cis-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylate and (R)- $\alpha$ - cyano-3 phenoxybenzyl-(1S)-cis-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylate  (= cis-2 isomer pair of cypermethrin)
<b>Chemical name (CA)</b>	Racemate comprising [1S-[1 $\alpha$ (R*), 3 $\alpha$ ]]-cyano-(3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropane carboxylate and [1R-[1 $\alpha$ (S*), 3 $\alpha$ ]]-cyano-(3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropane carboxylate
<b>CIPAC No</b>	454
<b>CAS No</b>	[67375-30-8]
<b>EEC No</b>	Not allocated
<b>FAO SPECIFICATION</b>	Not available
<b>Minimum purity</b>	930 g/kg cis-2
<b>Molecular formula</b>	C <sub>22</sub> H <sub>19</sub> Cl <sub>2</sub> NO <sub>3</sub>
<b>Molecular mass</b>	416.3

**Structural formula**



<b>Melting point</b>	81.5 °C (97.3%)
<b>Boiling point</b>	Cannot be determined at atmospheric pressure (a.s. decomposes at ca. 270 °C)
<b>Appearance</b>	Purified a.s. (99.8%) : fine powder (solid), white, non detectable odour a.s. as manufactured (96.3% ) : crystalline powder (solid), creamy white, slight chemical odour
<b>Relative density</b>	1.33 at 20°C (97.3%)
<b>Vapour pressure</b>	$3.4 \times 10^{-7}$ Pa at 25 °C (97.3%)
<b>Henry's law constant</b>	0.069 Pa.m <sup>3</sup> /mol at 20 °C
<b>Solubility in water</b>	at 20°C (98%) : 0.67 µg/L (pH 4) 3.97 µg/L (pH 7) 4.54 µg/L (pH 9) 1.25 µg/L (double distilled water)
<b>Solubility in organic solvents</b>	at 21°C (97.3%) n-hexane : 6.5 g/L toluene : 596 g/L dichloromethane : miscible (> 10 <sup>3</sup> g/L) methanol : 21.3 g/L 2-propanol : 9.6 g/L acetone : miscible (> 10 <sup>3</sup> g/L) ethyl acetate : 584 g/L
<b>Partition co-efficient (log P<sub>ow</sub>)</b>	5.5 at 20°C (95.4%) no effect of pH (no dissociation)
<b>Hydrolytic stability (DT<sub>50</sub>)</b>	at pH 4, 50 °C : hydrolytical stability (no degradation after 10 days) at pH 7, 20 °C : DT <sub>50</sub> = 101 d k = 0.00685 d <sup>-1</sup> ; at pH 9, 20 °C : DT <sub>50</sub> = 7.3 d
<b>Dissociation constant</b>	no dissociation of the a.s.
<b>Quantum yield of direct photo-transformation in water at λ &gt;290 nm</b>	φ = $8.12 \times 10^{-3}$
<b>Flammability</b>	not highly flammable not auto-flammable
<b>Explosive properties</b>	not explosive
<b>UV/VIS absorption (max.)</b>	at λ <sub>max</sub> (276 nm) : ε = 2073 L.mol <sup>-1</sup> .cm <sup>-1</sup> at 300 nm : ε = 38.64 L.mol <sup>-1</sup> .cm <sup>-1</sup>
<b>Photostability in water (DT<sub>50</sub>)</b>	at pH 5, 22 °C : DT <sub>50</sub> = 1.2 d (Cp-label) – 2.2 d (Bz-label)

## APPENDIX II

### END POINTS AND RELATED INFORMATION

#### ALPHA-CYPERMETHRIN

## 1 Toxicology and metabolism

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

Rate and extent of absorption:	46% within 24 h
Distribution:	Widely distributed, highest residue in fat and skin
Potential for accumulation:	High accumulation in fat
Rate and extent of excretion:	76-78% within 24 h ( 43-46% in urine; 30-35% in faeces)
Toxicologically significant compounds:	Parent compound
Metabolism in animals:	± 50 % metabolised via hydrolytic cleavage of ester bound

### Acute toxicity

Rat LD <sub>50</sub> oral:	57 mg/kg bw (corn oil) <b>T, R25</b>
Rat LD <sub>50</sub> dermal:	>2000 mg/kg bw
Rat LC <sub>50</sub> inhalation:	>0.593 mg/l air /4h <b>R37</b> (highest technical attainable concentration)
Skin irritation:	Non-irritant
Eye irritation:	Non-irritant
Skin sensitization (test method used and result):	not sensitising (M&K)

### Short term toxicity

Target / critical effect:	Irritation secondary to systemic toxicity (dogs)
Lowest relevant oral NOAEL / NOEL:	1 year- dog study ; 60 ppm (1.5 mg/kg bw/d) ; R48/22  90-day dog study : 90 ppm (2.3 mg/kg bw/d)
Lowest relevant dermal NOAEL / NOEL:	No data- not required
Lowest relevant inhalation NOAEL / NOEL:	6h/day; 5 d/week, 3 week rat : >0.029 mg/l (no systemic effects, only local inflammatory effects)

**Genotoxicity**

No genotoxic potential

**Long term toxicity and carcinogenicity**

Target / critical effect:

Decreased body weight gain, clinical signs of neurotoxicity

Lowest relevant NOAEL:

78 week mice study ; 30 ppm (3 mg/kg bw/d)

Carcinogenicity:

No carcinogenic potential

**Reproductive toxicity**

Target / critical effect - Reproduction:

No reproductive toxicity

Lowest relevant reproductive NOAEL / NOEL:

&gt;20 mg/kg bw/d

Target / critical effect - Developmental toxicity:

Reduced foetal weight at maternal toxic doses

Lowest relevant developmental NOAEL / NOEL:

Rat : 9 mg/kg bw/d

**Delayed neurotoxicity**

Alphacypermethrin is toxic for CNS and peripheral motor nerves; neurobehavioral changes are reversible within 3 days following single dose.

Acute rat study : NOAEL= 4 mg/kg bw (in corn oil)

4 week oral rat study NOAEL = 10 mg/kg bw/d (DMSO)

**Other toxicological studies**

No data – not required

**Medical data**Paresthesiae and peripheral sensory phenomena and irritation of respiratory tract; **R37****Summary**

	Value	Study	Safety factor
ADI:	0.015 mg/kg bw/d	dog, 1 y study	100
AOEL systemic:	0.01 mg/kg bw/d	Dog, 90 d study	100 /0.45
AOEL inhalation:	Not required		
AOEL dermal:	Not required		
ARfD (acute reference dose):	0.04 mg/kg bw/d	Rat, acute neurotoxicity study	100

## **Dermal absorption**

10% default value
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## 2 Fate and behaviour in the environment

### 2.1 Fate and behaviour in soil

#### Route of degradation

##### Aerobic:

Mineralization after 100 days:

20-47% at d 168 (cis-isomers of cypermethrin, both labels)

Non-extractable residues after 100 days:

21-57% at d 168 (cis-isomers of cypermethrin, both labels)

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

No metabolite > 10%  
(3-phenoxybenzoic acid is found in one clay soil at level of 23-48% at d 364)

#### Supplemental studies

##### Anaerobic:

(cypermethrin) Half-lives under aerobic and anaerobic conditions are similar.  
Formation of metabolite 3-phenoxybenzoic acid (67.6 % at d 120), bound residue (11% at d 120), no mineralisation

##### Soil photolysis:

DT50 (light) = 31 d; DT50 (dark) = 193 d  
Formation of metabolites 3-phenoxybenzoic acid (17% at d 30), phenoxybenzoic alcohol (2.7% at day 30), bound residue (13.3% at d 30), mineralisation (6.2% at d 30).

##### Remarks:

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#### Rate of degradation

##### Laboratory studies

DT<sub>50</sub>lab (20 °C, aerobic):

cis isomers of cypermethrin: 25-125 d, median recalculated at 20°C : 103 d, 7 values

DT<sub>90</sub>lab (20 °C, aerobic):

cis isomers of cypermethrin: 102-792 d, median recalculated at 20°C : 166 d, 7 values

DT<sub>50</sub>lab (10 °C, aerobic):

54 d

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

31 d

**Field studies (country or region)**DT<sub>50f</sub> from soil dissipation studies:<14-112 d, median = 35 d, 9 measurements  
3-year study in 3 locations in UKDT<sub>90f</sub> from soil dissipation studies:35-<385 d, 9 measurements  
3-year study in 3 locations in UK

Soil accumulation studies:

No accumulation was observed in the 3 UK studies

Soil residue studies:

Not required

**Remarks:**

e.g. effect of soil pH on degradation rate

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## Adsorption/desorption

$K_f / K_{oc}$ :

$K_{oc}$  (a.s.)= 26492-144652, Median  $K_{oc}$  :57889  
Median  $K_{oc}$  (phenoxybenzoic acid) : 73

$K_d$ :

$K_d$  = 821-1042

pH dependence:

No

## Mobility

### Laboratory studies:

Column leaching:

Not required, sufficient information from A/D study

Aged residue leaching:

(cypermethrin) No residue is found in the leachate  
(limit of determination 0.2 µg/l)

3-phenoxybenzoic acid not recovered in the  
leachate

### Field studies:

Lysimeter/Field leaching studies:

Not required

### Remarks:

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## 2.2 Fate and behaviour in water

### Abiotic degradation

Hydrolytic degradation:

at pH 4, 50 °C : hydrolytical stability (no degradation after 10 days)

at pH 7, 20 °C :  $DT_{50} = 101$  d

$k = 0.00685$  d<sup>-1</sup>

at pH 9, 20 °C :  $DT_{50} = 7.3$  d

Major metabolites:

No major metabolites

Photolytic degradation:

Very slow degradation by sunlight

Major metabolites:

No major metabolites

### Biological degradation

Readily biodegradable:

No

Water/sediment study:

$DT_{50}$  water:

0.4-2.1 d

$DT_{90}$  water:

1.5-6.9 d

$DT_{50}$  whole system:

6.4-35.4 d

$DT_{90}$  whole system:

21.1-117.5 d

$DT_{50}$  3 phenoxybenzoic acid:

2.1-3 d

$DT_{90}$  3 phenoxybenzoic acid:

7.0-10.1 d

$DT_{50}$  dimethylcyclopropane carboxylic acid:

13.9-36.8 d

$DT_{90}$  dimethylcyclopropane carboxylic acid:

61.5-105.9 d

Distribution in water / sediment systems (active substance)

up to 62-55% in sediment at d 2

Distribution in water / sediment systems (metabolites)

3 phenoxybenzoic acid (up to 23% at d 7 in whole system),

dimethylcyclopropane carboxylic acid (up to 47% at 14 in water phase and up to 19.5% at d 14 in sediment)

Accumulation in water and/or sediment:

No accumulation in water or sediment

### Degradation in the saturated zone

Not required

Remarks:

-



## 2.3 Fate and behaviour in air

### Volatility

Vapour pressure:

$3.4 \times 10^{-7}$ Pa at 25 °C (97.3%)
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Henry's law constant:

0.069 Pa.m <sup>3</sup> /mol at 20 °C
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### Photolytic degradation

Direct photolysis in air:

No data
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Photochemical oxidative degradation in air

DT <sub>50</sub> : 3.47 h
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DT<sub>50</sub>:

Volatilisation:

From plant surfaces: not required
From soil: not required

Remarks:

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### 3 Ecotoxicology

#### Terrestrial Vertebrates

Acute toxicity to mammals:

Acute toxicity to birds:

Dietary toxicity to birds:

Reproductive toxicity to birds:

long term oral toxicity to mammals:

LD<sub>50</sub> (rat) = 57 mg a.s./kg bw

LD<sub>50</sub> (*Colinus virginianus*) > 2025 mg a.s./kg bw

Not available (reproduction study available)

NOEC (*Coturnix coturnix japonica*, 20 weeks) = 130 mg a.s./kg food

NOAEL (2 gen., rat) = 200 mg a.s./kg food or 5 mg a.s./kg bw/d

#### Aquatic Organisms

Acute toxicity fish:

Long term toxicity fish:

Bioaccumulation fish:

Acute toxicity invertebrate:

Chronic toxicity invertebrate:

Acute toxicity algae:

Chronic toxicity sediment dwelling organism:

Higher tier testing on aquatic invertebrates and algae

LC<sub>50</sub>: 2.8 µg/l (96 h, *Salmo gairdneri*)

NOEC: 0.03 µg/l (34 d, *Pimephales promelas*)

1204 (with cypermethrin)

EC<sub>50</sub>: 0.3 µg/l (48 h, *Daphnia*)

NOEC: 0.03 µg/l (21 d, *Daphnia*)

EC<sub>50</sub>: > 100 µg/l (96 h, *Selenastrum capricornutum*)

NOEC: 0.024 µg/l (28 d, *Chironomus larvae*)

EAC : 0.015 µg/l (126 d, mesocosm)

#### Honeybees

Acute oral toxicity:

Acute contact toxicity:

Technical a.s. : 0.059 µg a.s./bee  
FASTAC (EC 100 g/l) : 0.13 µg/bee

Technical a.s. : 0.033 µg a.s./bee  
FASTAC (EC 100 g/l) : 0.11 µg/bee

#### Other arthropod species

Test species

*Typhlodromus pyri*  
(protonymphs)

Stage	Test Substance	Dose (kg a.s./ha)	Endpoint	% Effect
protonymphs	100 g/l OESC	0.036 to 1.2 g a.s./ha lab	mortality	95-100%

Test species	Stage	Test Substance	Dose (kg as/ha)	Endpoint	% Effect
<i>Typhlodromus pyri</i> (protonymphs)	protonymphs	100 g/l OESC	0.00003 to 0.012 g a.s./ha lab	LR50 NOER (mort. + repr.)	0.00204 g a.s./ha 0.0015 g a.s./ha
<i>Typhlodromus pyri</i> (protonymphs)	protonymphs	150 g/kg WG	0.00003 to 0.012 g a.s./ha lab	LR50 NOER (mort. + repr.)	0.00154 g a.s./ha 0.00003 g a.s./ha
<i>Typhlodromus pyri</i> (protonymphs)	protonymphs	100 g/l EC	0.00003 to 0.012 g a.s./ha lab	LR50 NOER (mort. + repr.)	0.00161 g a.s./ha 0.0015 g a.s./ha
<i>Typhlodromus pyri</i> (protonymphs)	protonymphs	100 g/l OESC	0.21, 1.5, 30 g a.s./ha extended lab	Mortality and reproduction	Harmless at 0.21 g a.s./ha. Harmless at 1.5 g a.s./ha, DAT 14 and 30 g a.s./ha, DAT 34
<i>Typhlodromus pyri</i> (protonymphs)	protonymphs	100 g/l OESC	0.015 to 0.45 g a.s./ha extended lab	LR50	0.0626 g a.s./ha no significant effect on reproduction of up to 0.075 g a.s./ha
<i>Typhlodromus pyri</i> (protonymphs)	protonymphs	100 g/l OESC	15 g a.s./ha, 1 or 2 appl. aged residue extended lab	mortality	87-100% mortality at day 0 to day 28 after 1 or 2 appl.
<i>Aphidius rhopalosiphi</i> (adult)	adult	100 g/l OESC	0.015 to 3 g a.s./ha lab	LR50 NOER (mort. + repr.)	0.256 g a.s./ha < 0.03 g a.s./ha
<i>Aphidius rhopalosiphi</i> (adult)	adult	150 g/kg WG	0.1 to 0.9 g a.s./ha lab	LR50 NOER (mort. + repr.)	0.253 g a.s./ha 0.1 g a.s./ha
<i>Aphidius rhopalosiphi</i> (adult)	adult	100 g/l EC	0.01 to 0.5 g a.s./ha lab	LR50 NOER (mort. + repr.)	0.270 g a.s./ha 0.2 g a.s./ha
<i>Aphidius rhopalosiphi</i> (adult)	adult	100 g/l OESC	0.036 to 1.2 g a.s./ha extended lab	Mortality reproduction	Harmless at 1.2 g a.s./ha
<i>Aphidius rhopalosiphi</i> (adult)	adult	100 g/l OESC	0.075 to 3 g a.s./ha extended lab	LR50 NOER (mort. + repr.)	0.954 g a.s./ha no significant effect on reproduction of up to 0.75 g a.s./ha

<i>Test species</i>	Stage	Test Substance	Dose (kg as/ha)	Endpoint	% Effect
<i>Aphidius rhopalosiphi</i> (adult)	adult	150 g/kg WG	0.21 to 30 g a.s./ha extended lab	Mortality and reproduction	No effect on mortality at 0.21 and 1.2 g a.s./ha DAT 0 effects on reproduction at 0.21 and 1.2 g a.s./ha DAT 0  no effects on mortality and reproduction at 0.21-30 g a.s./ha DAT 21
<i>Pardosa</i> (adult)	adult	150 g/kg WG	0.21 to 30 g a.s./ha extended lab	mortality	Harmless at 0.6 and 0.21 g a.s./ha. Moderately harmful at 1.5 g a.s./ha. Harmful at 30 g a.s./ha.
<i>Poecilus cupreus</i> (adult)	adult	100 g/l OESC	1.2 g a.s./ha lab	Mortality feeding	Harmless at 1.2 g a.s./ha.
<i>Poecilus cupreus</i> (adult)	adult	150 g/kg WG	1.2 and 30 extended lab	Mortality feeding	LR50 > 30 g a.s./ha. Significant reduction in feeding 7 DAT but no significant reduction 7-14 DAT
<i>Aleochara bilineata</i> (adult)	adult	100 g/l OESC	0.036 to 1.2 g a.s./ha lab	Mortality and reproduction	Harmless at 0.036 to 0.7 g a.s./ha. slightly harmful at 1.2 g a.s./ha.
<i>Aleochara bilineata</i> (adult)	adult	100 g/l OESC	1.2 ga.s./ha aged residue extended lab	Mortality and reproduction	Harmless at 1.2 g a.s./ha 0 and 7 DAT
<i>Orius laevigatus</i> (nymphs)	Nymphs	100 g/l OESC	0.05 to 1 g a.s./ha extended lab	LR50	0.09688 g a.s./ha  no effect on reproduction at 0.05 g a.s./ha

<i>Test species</i>	Stage	Test Substance	Dose (kg as/ha)	Endpoint	% Effect
<i>Chrysoperla carnea</i> (larvae)	larvae	100 g/l OESC	0.1 to 8 g a.s./ha extended lab	LR50	0.68 g a.s./ha  no effect on reproduction up to 1 g a.s./ha
<i>Chrysoperla carnea</i> (larvae)	larvae	100 g/l OESC	15 g a.s./ha, 1 or 2 appl. Aged residue extended lab	Mortality and reproduction	Mortality of 50-79% at day 0 to 42 with 1 or 2 appl.; effects on reproduction in all treatments

## Earthworms

Acute toxicity:

LC50 > 100 mg a.s./kg soil

Reproductive toxicity:

(cypermethrin) No effect observed in a field test realized at 100 g a.s./ha

## Soil micro-organisms

Nitrogen mineralization:

Effects less than 25% after 28 days, at 30, 150 and 300 g a.s./ha

Carbon mineralization:

Effects less than 25% after 28 days, at 30, 150 and 300 g a.s./ha

**APPENDIX IIIA****ALPHA-CYPERMETHRIN**

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>6</sup> on previous use in granting national authorizations</b>
IIA 1.8	Cevasco, A.	1994	Manufacturing process for FASTAC - Alphacypermethrin TM CL900049 Generated by: American Cyanamid Company Submitted by: American Cyanamid Company ARD Princeton NJ USA P-134 November 1994 no unpublished	
IIA 1.9 IIA 1.10 IIA 1.11	Fotiou, F.	1995	Specification, impurities, and analytical profiles for technical grade alphacypermethrin and cypermethrin Generated by: American Cyanamid Company Submitted by: American Cyanamid Company ARD Princeton NJ APBR 457 April 1995 Yes unpublished	

<sup>6</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>6</sup> on previous use in granting national authorizations</b>
IIA 1.10	Zhang, Y.	1999	Additional information requested by the Belgium Regulatory Authorities for the re-registration of alphacypermethrin (AC 900049) technical grade active ingredient with the EU.  Generated by: American Cyanamid Company  Submitted by: American Cyanamid Company  APBR976  1999  no  unpublished	
IIA 2.4.1, 2.4.2	Cevasco, AA.	1999	Determination of the physical state, colour and odour for alphacypermethrin (AC 900049) purified active substance (PAS) and technical active substance (TAS).  Generated by: American Cyanamid Company  Submitted by: American Cyanamid Company  P285  no  unpublished	
IIA 2.5.1	Ferri, J. Zhang, Y.	1992	Spectral database for FASTAC technical (CL900049)  Generated by: American Cyanamid Company  Submitted by: American Cyanamid Company  ARD Princeton NJ USA APBR.342  no  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>6</sup> on previous use in granting national authorizations</b>
IIA 2.10	Mangels,G.	1995	Alphacypermethrin : Estimation of the photochemical oxidation rate in the atmosphere Generated by: American Cyanamid Company Submitted by: American Cyanamid Company ARD Princeton NJ USA ENV 95-017 no unpublished	
IIA 2, IIA 2.3.2	Martin CA.	1999	Alphacypermethrin (AC 900049) : Calculation of Henry's Law constant. Generated by: American Cyanamid Company Submitted by: American Cyanamid Company ENV 99-004 no unpublished	
IIA 2.9.1	Van Dijk,A.	1993	Hydrolysis determination of <sup>14</sup> C alphacypermethrin at different pH values Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company RCC Itingen RCC Project 307383 yes unpublished	
IIA 2.9.2, 2.9.3, 2.5	Concha, M et al	2001	BAS 310I (Alphacypermethrin): Aqueous Photolysis ENV 01-037, 24 October 2001	



<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>6</sup> on previous use in granting national authorizations</b>
IIA 4.1.2	Fotiou, F.	1995	Validation of the high resolution gas chromatographic method M-2447.03 Generated by: American Cyanamid Company Submitted by: American Cyanamid Company ARD Princeton NJ APBR 456 yes unpublished	
IIA 4.1.2	Kirzecky, N.	1995	Validation of the HPLC method M-2480.01 Generated by: American Cyanamid Company Submitted by: American Cyanamid Company ARD Princeton NJ APBR 458 yes unpublished	
IIA 4.1.1 IIA 4.1.2	Ramanathan, P.S.	1996	Analytical validation of the methods used for the analysis of alphamethrin Generated by : Gharda Chemicals Ltd. Submitted by : Gharda Chemicals Ltd. Report/file No. : not specified yes unpublished	
IIA 4.1.1	Worst, S. A.	1995	Validation of the high resolution gas chromatographic method M-2420.01 Generated by: American Cyanamid Company Submitted by: American Cyanamid Company ARD Princeton NJ APBR 448 yes 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>6</sup> on previous use in granting national authorizations</b>
IIA 4.2.1	Walker, B. Linkerhagner, M.	2000 a	Alphacypermethrin (AC 900049) : Validation of the DFG method S19 (extended revision) for the determination of residues of alphacypermethrin in/on grapes, wheat grain, cabbage and oilseed rape  Generated by : BASF (formerly Cyanamid) Submitted by : BASF (formerly Cyanamid) CYA-0002V / Az. G00-0030  yes unpublished	
IIA 4.2.1	Walker, B. Linkerhagner, M.	2000 b	Alphacypermethrin (AC 900049) : Validation of the DFG method S19 (extended revision) for the determination of residues of alphacypermethrin in processed fractions of cabbage and oilseed rape  Generated by : BASF (formerly Cyanamid) Submitted by : BASF (formerly Cyanamid) CYA-0003V / Az. G00-0031  yes unpublished	
IIA 4.2.1 IIIA 5.2.1	Young, H	29- Oct- 01	Confirmatory Analysis of BAS 310I (Alphacypermethrin) in Cabbage, Oilseed Rape, Barley Grain & Grapes using RLA 12644. Report 4738, 18 October 2001	
IIA 4.2.2 IIIA 5.2.2 IIA 4.2.3 IIIA 5.2.3 IIA 4.2.5 IIIA 5.2.5	Xu, B	29- Oct- 01	BAS 310I (Alphacypermethrin): Validation of Method M 3499 for the Confirmation of BAS 310I Residues in Water, Soil and Blood by GC/MS. RES 01-05825 October 2001	

<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>6</sup> on previous use in granting national authorizations</b>
IIA 4.2.5	Walker, B. Linkerhagner, M.	2000 c	Alphacypermethrin (AC 900049) : Validation of the DFG method S19 (extended revision) for the determination of residues of alphacypermethrin in blood and urine of animal origin (swine)  Generated by : BASF (formerly Cyanamid)  Submitted by : BASF (formerly Cyanamid)  CYA-0001V / Az. G00-0029  yes unpublished	
IIA 4.2.3, IIIA 5.2.3	Werle, H.	1999	Alphacypermethrin (CL 900049) : Validation of method SAMS 469-2 for the determination of residues in surface water.  Generated by: American Cyanamid Company  Submitted by: American Cyanamid Company  CFS 1999-051  yes 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>
IIA 5.2.1/03	Gardner J.	1993	Fastac Technical Acute Oral and Dermal Toxicity in Rat Skin and Eye Irritancy in Rabbit and Skin Sensitization Potential in Guinea Pig  SRC SBTR.92.033  BASF RDI No.: AL-410-003  Yes 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 5.2.3/01	Jackson G.	1993	Alphacypermethrin Acute Inhalation Toxicity in Rats 4 Hour Exposure HRC Huntingdon SLL 266/930770 BASF RDI No.: AL-413-001 Yes Unpublished	
IIA 5.3.1/03	Green C.	1993	Alphacypermethrin Preliminary Toxicity Study by Dietary Administration to CD-1 Mice for Four Weeks LSR EYE UK LSR 92/SHL008/0346 BASF RDI No.: AL-420-005 Yes Unpublished	
IIA 5.3.1/04	Fokkema G.	1993	Alphacypermethrin Fastac A 6 Week Range Finding Feeding Study in the Rat SRC Sittingbourne SBTR.93.002 BASF RDI No.: AL-420-006 No Unpublished	
IIA 5.3.2/03	Green C.	1994	Alphacypermethrin Preliminary Toxicity Study by Dietary Administration to CD-1 Mice for 13 Weeks Pharmaco-LSR Eye Suffolk UK 92/SHL009/0849 BASF RDI No.: AL-425-006 Yes Unpublished	
IIA 5.4.1/02	Brooks T.	1993	Fastac TM Bacterial Mutagenicity Studies SRC Sittingbourne SBTR.92.022 BASF RDI No.: AL-435-005 Yes 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 5.4.1/03	Wart I.	1994	Evaluation of the Mutagenic Activity of Fastac Technical in an In Vitro Mammalian Cell Gene Mutation Test with L5178Y Mouse Lymphoma Cells (with Independent Repeat) RCC Notox 087367 BASF RDI No.: AL-435-007 Yes Unpublished	
IIA 5.4.1/04	Brooks T. and Wiggins D.	1993	Fastac TM: In Vitro Chromosome Studies Using Cultured Human Lymphocytes SRC Sittingbourne SBTR.93.007 BASF RDI No.: AL-435-006 Yes Unpublished	
IIA 5.4.2/02	Wart I.	1995	Micronucleus Test in Bone Marrow Cells of the Mouse with Fastac Technical RCC Notox Netherlands RCC Notox 087378 BASF RDI No.: AL-435-008 Yes Unpublished	
IIA 5.5/02	Dean I. and Jackson F.	1995	WL85871 A 52 Week Oral (Dietary) Toxicity Study In Dogs. IRI Report No. 11110 BASF RDI No.: AL-427-001 Yes Unpublished	
IIA 5.5/03	Green C.	1995	Alphacypermethrin Oncogenicity Study by Dietary Administration to CD 1 Mice – 52 Week Interim Report Report No. 94/SHL010/0629 BASF RDI No.: AL-428-001 Yes 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 5.6.2/01	Irvine L. and Twomey K.	1994	Alphacypermethrin Oral Gavage Rabbit Developmental Toxicity Dose Ranging Study Toxicol Labs Ledbury UK SLN/3/92 BASF RDI No.: AL-432-003 Yes Unpublished	
IIA 5.6.2/02	Irvine L.	1994	Alphacypermethrin Oral Gavage Rabbit Developmental Toxicity Teratogenicity Study Toxicol Labs Ledbury UK SLN/4/93 BASF RDI No.: AL-432-004 Yes Unpublished	
IIA 5.6.2/03	Irvine L. and Twomey K.	1994	Alphacypermethrin Oral Gavage Rat Developmental Toxicity Dose Ranging Study Toxicol Labs Ledbury UK SLN/1/92 BASF RDI No.: AL-432-001 Yes unpublished	
IIA 5.6.2/04	Irvine L.	1994	Alphacypermethrin Oral Gavage Rat Developmental Toxicity Teratogenicity Study Toxicol Labs Ledbury UK SLN/2/92 BASF RDI No.: AL-432-002 Yes unpublished	
IIA 5.7/01	Fokkema G.	1994	WL85871 FASTAC An Acute Oral Gavage Neurotoxicity Study in the Rat SRC Sittingbourne SBTR.92.027 BASF RDI No.: AL-451-004 Yes 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>	<b>Reports on previous use in granting national authorizations</b>
IIA 6.0 IIIA 8.2	Dale, T	2002	Alphacypermethrin - Freezer Storage Stability in Oil Seed Rape (Whole Plant, Whole Pod and Seed) Study 00602F (Interim Report). 4832, 28 March 2002	
IIA 6.0 IIIA 8.2	Smalley, R	2002	Alphacypermethrin - Freezer Storage Stability in Oil Seed Rape (Whole Plant, Whole Pod and Seed) Study 00999F. 4807, 22 March 2002	
IIA 6.1	Chapleo S.	2000	FASTAC Alpha-Cypermethrin (CL 900049) : Metabolism of <sup>14</sup> C-CL 900049 in Wheat (Interim report), 2000 – BASF. Yes	
IIA 6.1	Mercer, A. Hill, A. Standen, M.	1994 a	<sup>14</sup> C WL85871 alphacypermethrin characterisation of the terminal residues in mature wheat treated with vinyl <sup>14</sup> C WL85871 formulated as CF05898 interim report  Generated by: American Cyan. Co. Submitted by: American Cyan. Co. SRC SBTR.93.070 Yes unpublished	
IIA 6.1	Mercer, A. Hill, A. Standen, M.	1994 b	<sup>14</sup> C WL85871 alphacypermethrin characterisation of the terminal residues in mature wheat treated with benzyl <sup>14</sup> C WL85871 formulated as CF05898 interim report  Generated by: American Cyan. Co. Submitted by: American Cyan. Co. SRC SBTR.93.071 Yes unpublished	
IIA 6.1 IIA 6.7	Grolleau G.	May-02	Alphacypermethrin (AC 900049) 150 g a.s./kg WG (RLM 11203): Residue Determination in Rotational Crops, Italy 2000. AL-IT-00-608, 2002	

<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 6.1 IIA 6.7	Smalley R	May-02	Study on the Residue Behaviour of Alphacypermethrin in Lettuce, Carrots, Cabbage and Wheat after Application of BAS 310 Under Field Conditions in France (N and S) and the United Kingdom, 2001 4803, 2002	
IIA 6.2	Morrison, B. Richardson, K.	1994	Alphacypermethrin metabolism of <sup>14</sup> C WL85871 After repeated oral dosing in the lactating cow in life phase and metabolite profiling  Generated by: American Cyanamid Company  Submitted by: American Cyanamid Company  SRC SBTR.93.063  Yes  unpublished	
IIA 6.2	Mc Combe W.S. & Phillips M.	2000	FASTAC Alpha-Cypermethrin (CL 900049) : Metabolism of <sup>14</sup> C-CL 900049 in Laying Hen (Status Report), 2000 – BASF.  Yes	
IIA 6.3/42	Carlson, R.	1993 a	Residues of alphacypermethrin in fodder peas from France treated with FASTAC PVP 1992 trials  Generated by: Shell International Chemical Company  Submitted by: American Cyanamid Company  Shell Chemie Berre BEGR.93.011A  No  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 6.3/52	Carlton, R.	1993 b	Residues of alphacypermethrin in rapeseeds from France treated with FASTAC pvp 1992 trials Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company Shell Chemie Berre BEGR.93.012A No unpublished	
IIA 6.3.12/53	Carlton, R.	1993 c	Residues of alphacypermethrin in rapeseeds from Germany treated with FASTAC pvp 1992 trials Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company Shell Chemie Berre BEGR.93.014 No unpublished	
IIA 6.3/67	Carlton, R.	1993 d	Residues of alphacypermethrin in cereals from France treated with FASTAC pvp 1992 trials Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company Shell Chemie Berre BEGR.93.009A No unpublished	
IIA 6.3/68	Carlton, R.	1993 e	Residues of alphacypermethrin in wheat from France treated with FASTAC pvp 1992 trials Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company Shell Chemie Berre BEGR.93.010A No 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 6.3/69	Carlou, R.	1993f	Residues of alphacypermethrin in wheat from Germany treated with FASTAC pvp 1992 trials Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company Shell Chemie Berre BEGR.93.013 No unpublished	
IIA 6.3 IIIA 8.2	Grolleau, G	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203) : At harvest residue study on alphacypermethrin in head cabbage, South France, 2000 AL-FR-00-609, 11 October 2001	
IIA 6.3 IIIA 8.2	Grolleau, G	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203) : At harvest residue study on alphacypermethrin in head cabbage, Hellas, 2000 AL-HE-00-611, 27 September 2001	
IIA 6.3 IIIA 8.2	Grolleau, G	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203) : At harvest residue study on alphacypermethrin in head cabbage, Italy, 2000 AL-IT-00-604, 12 October 2001	
IIA 6.3 IIIA 8.2	Grolleau, G	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203) : Decline curve residue study on alphacypermethrin in head cabbage, South France, 2000 AL-FR-00-610, 11 October 2001	
IIA 6.3 IIIA 8.2	Grolleau, G	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203) : Decline curve residue study on alphacypermethrin in head cabbage, Hellas, 2000 AL-HE-00-612, 27 September 2001	
IIA 6.3 IIIA 8.2	Grolleau, G	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203) : At harvest residue study on alphacypermethrin in oilseed rape and oil, South France, 2000 AL-FR-00-602, 12 October 2001	
IIA 6.3 IIIA 8.2	Grolleau, G	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203) : Decline curve residue study on alphacypermethrin in oilseed rape, South France, 2000 AL-FR-00-601, 12 October 2001	

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 6.3 IIIA 8.2	Jones, S	2001	Study on the residue behaviour of BAS 310 I in cabbage after application of BAS 310 08 I under field conditions in Spain, Italy, 2001 4817, 8 March 2002	
IIA 6.3 IIIA 8.2	Trehitt, J & Zimmerman U	2002	Study on the residue behaviour of alphacypermethrin in winter oil seed rape after treatment with BAS 310 08 I under field conditions in France and Spain, 2001 2002/1004087, 19 March 2002	
IIA 6.4	Redgrave, V.	1992	<sup>14</sup> C alphacypermethrin concentrations of residues in bovine milk and tissues Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company HRC Huntingdon UK SL/240/920997 Yes unpublished	
IIA 6.4	Redgrave, V.	1993	Alphacypermethrin concentrations of residues in bovine tissues Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company HRC Huntingdon SLL 279/931913 Yes unpublished	
IIA 6.4	Viljoen, A.	1992	Determination of alphacypermethrin residues in bovine tissues Generated by: Shell International Chemical Company Submitted by: American Cyanamid Company SABS Pretoria South Africa Report 311/88391/J190 Yes 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 6.4	Horton, WE	2001	FASTAC insecticide (Alphacypermethrin, CL 900049, BAS 310I): Magnitude of Alphacypermethrin Residues in the Milk and Edible Tissues of Dairy Cattle Following Oral Administration for Twenty-Eight (28) Consecutive Days. RES 01-008, 12 October 2001	

**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 7.2.1.2	Fisk ,P.	1994	Alphacypermethrin photodegradation in water preliminary experiment including a comparison with esfenvalerate  Generated by: American Cyanamid Company  Submitted by: American Cyanamid Company  SRC Sittingbourne UK SBTR.93.030 Yes unpublished	
IIA 7.1.2	Hill, A.	1993	Benzyl <sup>14</sup> C alphacypermethrin WL85871 FASTAC : adsorption desorption in three soils  Generated by: Shell International Chemical Company  Submitted by: American Cyanamid Company  SRC Sittingbourne SBTR.93.042 Yes 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 7.2.1.1	Van Dijk, A.	1993	Hydrolysis determination of <sup>14</sup> C alphacypermethrin at different pH values  Generated by: Shell International Chemical Company  Submitted by: American Cyanamid Company  RCC Itingen RCC 307383  Yes  Unpublished	
IIA 7.1.1.1.2	Van Dijk, A. Burri, R.	1993	<sup>14</sup> C alphacypermethrin : study of its photodegradation on soil  Generated by: Shell International Chemical Company  Submitted by: American Cyanamid Company  Rcc Itingen Project RCC 299777  Yes  Unpublished	
IIA 7.1.2	Holman R.	2002	<sup>14</sup> C-CL 206128 (Metabolite of BAS 310 I, alphacypermethrin): Adsorption/Desorption on Soils. BASF Agro Research, Ewing, New Jersey, United States.  yes  ENV 02-004, 2002	

**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>	<b>Reports on previous use in granting national authorizations</b>
IIA 8.1.1	Helsten, BR, & Sayed Ahmed	2000	Avian acute oral toxicity test with Alphacypermethrin (AC 900049) technical in Northern Bobwhites ( <i>Colinus virginianus</i> ). ETX-00-107, 1 September 2000.	

<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 8.2.7	Heintze	1997	Alphacypermethrin (AC 900049): Effects on the development of sediment-dwelling larvae of Chironomus riparius in a water-sediment system. AL 523-002. 1997	
IIA 8.2 IIIA 10.4	Mitchell, G	2000	Overview of a higher tier evaluation of the potential effects of FASTAC insecticide (alphacypermethrin) on aquatic organisms. November 2000	
IIA 8.2 IIIA 10.4	Huber, W	2000	Evaluation of an Ecological Acceptable Concentration (EAC) for Alphacypermethrin in Aquatic Environments. Report No 2000/II, 1 October 2000	
IIA 8.2 IIIA 10.4	Huber, W	2000	Summary of an Expert panel Opinion of the study "Evaluation of Possible Effects of a 100 g/L SC Formulation (CF 06677) of AC 900049 (alphacypermethrin) on Macro-invertebrates, Zooplankton and Algae in Pond-Enclosures and Determination of the Ecologically Acceptable Concentration (EAC)" 2000/I, 31 July 2000	
IIA 8.2 IIIA 10.4	Funk, M et al	2000	Acute toxicity of Alphacypermethrin (AC 900049) in a 100 g/l OESC formulation (CF06677) to aquatic macroinvertebrates. Report No ECO 00-217, 15 October 2000	
IIA 8.2 IIIA 10.4	Mitchell, GC	2000	Evaluation of Possible Effects of a 100 g/l SC Formulation (CF 06677) of AC 900049 (alphacypermethrin) on Macro-invertebrates, Zooplankton and Algae in Pond-Enclosures and Determination of the Ecologically Acceptable Concentration (EAC) ETX-99-101, 9 March 2000	
IIA 8.2 IIIA 10.4	Huber, W et al	2000	Evaluation of possible effects of a 100 g/l SC Formulation (CF06677) of AC 900049 (Alphacypermethrin) on Macroinvertebrates, Zooplankton, and Algae in Ponds. Report No. ECO-97-144, 1 October 2000.	

<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 8.3.2 IIIA 10.5	Vinall, S & Strnad S	2000	A laboratory test to determine the effects of Alphacypermethrin (AC 900049), in a 100 g/l OESC Formulation (CF06677) on the predatory mite, Typhlodromus pyri (Phytoseiidae). Report No ETX-99-206, 31 May 2000.	
IIA 8.3.2 IIIA 10.5	Baxter, I & Strnad S	2000	An extended laboratory test to determine the effects of Alphacypermethrin (AC 900049), in a 100 g/l OESC Formulation (CF06677) on the parasitic wasp, Aphidius rhopalosiphi (Hymenoptera, Braconidae). Report No ETX-99-205, 16 October 2000.	
IIA 8.3.2 IIIA 10.5.1 IIIA 10.6.2	Strnad, S	2002	Alphacypermethrin: Assessment of the risk to non-target arthropods April 2002	
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the predatory mite, Typhlodromus pyri (Acarina, Phytoseiidae). ETX-00-332, 2001	
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLM 11203), on the predatory mite, Typhlodromus pyri (Acarina, Phytoseiidae). ETX-00-334, 2001	
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L EC formulation (CF 05898), on the predatory mite, Typhlodromus pyri (Acarina, Phytoseiidae). ETX-00-330, 2001	
IIA 8.3.2 IIIA 10.5.1	Taruza S	2001	An extended laboratory test to determine the effects of fresh and aged residues of the insecticide alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the predatory mite, Typhlodromus pyri (Phytoseiidae). ETX-00-260, 2001	

<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 8.3.2 IIIA 10.5.1	Taruza S. and Strnad	2002	A rate-response extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on the predatory mite, Typhlodromus pyri (Acari: Phytoseiidae). 67278, 2002	
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S	2002	An aged-residue extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on the predatory mite, Typhlodromus pyri (Phytoseiidae). 108449, 2002	
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the parasitic wasp, Aphidius rhopalosiphi (Hymenoptera, Braconidae). ETX-00-331, 2001	
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLM 11023), on the parasitic wasp, Aphidius rhopalosiphi (Hymenoptera, Braconidae). ETX-00-333, 2001	
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L EC formulation (CF 05898), on the parasitic wasp, Aphidius rhopalosiphi (Hymenoptera, Braconidae). ETX-00-329, 2001	
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2002	A rate-response extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on parasitic wasp Aphidius rhopalosiphi (Hymenoptera, Braconidae). BASF-01-24, 2002	



<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 8.3.2 IIIA 10.5.1	Baxter I. and Strnad S	2001	An extended laboratory test to determine the effects of fresh residues of the insecticide alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLF 12152), on parasitic wasp <i>Aphidius rhopalosiphi</i> . ETX-00-200, 2001	
IIA 8.3.2 IIIA 10.5.1	Baxter I.	2000	An extended laboratory test to determine the effects of fresh residues of the insecticide alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLF 12152), on the ground-dwelling spiders of the genus <i>Pardosa</i> (Araneae, Lycosidae). ETX-00-202, 2000	
IIA 8.3.2 IIIA 10.5.1	Baxter I. and Strnad S	2000	A laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the ground-dwelling predator, <i>Poecilus cupreus</i> (Coleoptera, Carabidae). ETX-99-207, 2000	
IIA 8.3.2 IIIA 10.5.1	Baxter I. and Strnad S	2000	An extended laboratory test to determine the effects of fresh residues of the insecticide alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLF 12152), on the ground-dwelling predator, <i>Poecilus cupreus</i> (Coleoptera, Carabidae). ETX-00-203, 2000	
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2000	A laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the ground-dwelling parasitic beetle, <i>Aleochara bilineata</i> (Coleoptera, Staphylinidae). ETX-99-208, 2000	
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S.	2001	An extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the ground-dwelling parasitic beetle, <i>Aleochara bilineata</i> (Coleoptera, Staphylinidae). ETX-00-261, 2001	

<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 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2002	A rate-response extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049) in a 100 g/L OESC formulation (BAS 310 I), on the foliar-active predator, Orius laevigatus (Heteroptera; Anthocoridae). 108455, 2002	
IIA 8.3.2 IIIA 10.5.1	Manley B	2002	A rate-response extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on foliar-active predator, Chrysoperla carnea (Neuroptera, Chrysopidae). 108453, 2002	
IIA 8.3.2 IIIA 10.5.1	Manley B	2002	An aged-residue extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on the foliar-active predator, Chrysoperla carnea (Neuroptera: Chrysopidae) 108451, 2002	
IIA 8.5 IIIA 10.7 IIIA 10.6.2	Chapleo, S, & Strnad S	2000	The effect of Alphacypermethrin (AC 900049) in a 100 g/l OESC formulation on Carbon and Nitrogen Transformations of the soil Microflora. Report No. ETX-00-108, 6 April 2000.	
IIA8.7	Lebertz, H & Yan Z	2001	Alphacypermethrin (BAS 310I): Activated sludge, Respiration Inhibition Test (Report Amendment #1) ENV 00-023.01, 30 March 2001	
IIA 8.4, IIIA 10.6.2	Poyntz, B	2002	Alphacypermethrin : Assessment of the risk to soil-dwelling macro-invertebrates April 2002	
IIA 8.4, IIA 8.5 IIIA 10.6.2	Pease, G. & Forster A.	2002	A Field Evaluation on the Effects of Alphacypermethrin (BAS 310 03 I), in a 100 g/L OESC Formulation (CF 06677) on the Degradation of Buried Straw in Litter Bags. ER-02-KCB155, 19 March 2002	
IIA 8.6, IIIA 10.8	Ortlip, C	2001	Effect of alphacypermethrin 100 g/l OESC formulation at 30 and 90 g a.i./ha on vegetative vigor of six terrestrial plant species AC 12704:008, 18 January 2001	

**APPENDIX IIIB****ALPHA-CYPERMETHRIN**

List of studies which were submitted during the evaluation process and were not cited in the draft assessment report:

**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 2.6.1/1 Addendum	Daum A.	2001	Determination of the Solubility in Water of Reg. No. 130213 (BAS 310 I) Identical with CL # 206128. BASF Agricultural Center Limburgerhof, Limburgerhof, Germany. Study Code: PCP06276. BASF DocID 2001/1009851 BASF RDI No.: AL-311-004 Yes Unpublished
IIA 2.6.1/2 Addendum	Daum A.	2001	Determination of the Solubility in Water of Reg. No. 4080830 (metabolite of BAS 310 I) Identical with CL # 912554. BASF Agricultural Center Limburgerhof, Limburgerhof, Germany. Study Code: PCP06287. BASF DocID 2001/1009912 BASF RDI No.: AL-311-005 Yes Unpublished
IIA 2.6.1/3 Addendum	Daum A.	2001	Determination of the Solubility in Water of Reg. No. 4080665 (BAS 310 I) Identical with CL # 206969. BASF Agricultural Center Limburgerhof, Limburgerhof, Germany. Study Code: PCP06283. BASF DocID 2001/1009852 and Report Amendment 1: 2001/1014494 BASF RDI No.: AL-311-006 Yes 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 2.7/1 Addendum	Bixler T. and Kukel C.	2001	CL 900049 (alpha-cypermethrin): Solubility in Acetone: Hexane, Stability in Hexane and Freezer Storage Stability of CL 900049 Residues in Cattle Tissues (Muscle, Liver, Kidney and Fat) and Milk Maxim Technologies, Inc. Middleport, NY. Study Code AP00PT05 and Report No. RES 01-002 BASF RDI No.: AL-326-035 Yes Unpublished
IIA 2.9.2/1 Addendum	Concha M., Yan Z. and Beigel C.	2001	BAS 310 I (Alphacypermethrin): Aqueous Photolysis PTRL West, Inc. Hercules, CA PTRL Project No. 903W. BASF Study No. E-00-009 BASF RDI No.: AL-324-003 Yes Unpublished
IIA 3.9/1 Addendum	Schenk W.	2001	Possible Procedures for the Decontamination of Water from ALPHA-CYPERMETHRIN BASF AG, Ludwigshafen/Rhein, Germany Fed.Rep. BASF RegDoc# 2001/1003822. BASF RDI No.: AL-290-003 No Unpublished
IIA 4.2.1 IIIA 5.2.1	Young, H	2001	Confirmatory Analysis of BAS 310I (Alphacypermethrin) in Cabbage, Oilseed Rape, Barley Grain & Grapes using RLA 12644. Report 4738, 18 October 2001
IIA 4.2.2 IIIA 5.2.2 IIA 4.2.3 IIIA 5.2.3 IIA 4.2.5 IIIA 5.2.5	Xu, B	2001	BAS 310I (Alphacypermethrin): Validation of Method M 3499 for the Confirmation of BAS 310I Residues in Water, Soil and Blood by GC/MS. RES 01-05825 October 2001

<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 4.2.1.1/1 Addendum	Walker B. and Linkerhägner M.	2000 a	Alphacypermethrin (AC 900049): Validation of the DFG Method S 19 (extended revision) for the Determination of Residues of Alphacypermethrin in/on Grapes, Wheat Grain, Cabbage and Oilseed rape.  Dr. Specht & Partner, Chemische Laboratorien GMBH, Hamburg, Germany. BASF Project#AP00PT03 Sept. 2000.  BASF Corporation, Princeton, NJ. USA. BASF RDI No.: AL-244-008  Yes Unpublished
IIA 4.2.1.1/2 Addendum	Walker B. and Linkerhägner M.	2000 b	Alphacypermethrin (AC 900049): Validation of the DFG Method S 19 (extended revision) for the Determination of Residues of Alphacypermethrin in Processed Fractions of Cabbage and Oilseed Rape.  Dr. Specht & Partner, Chemische Laboratorien GMBH, Hamburg, Germany. BASF Project#AP00PT04. Sept. 2000.  BASF Corporation, Princeton, NJ. USA. BASF RDI No.: AL-244-009  Yes Unpublished
IIA 4.2.1.1/3 Addendum	Young H.	2001	Confirmatory Analysis of BAS 310I (Alphacypermethrin) in Cabbage, Oilseed Rape, Barley Grain & Grapes using RLA 12644.  BASF Agro Research, BASF plc. Gorport, UK. BASF Report No.: 4738  BASF Corporation, Princeton, NJ. USA. BASF RDI No.: AL-244-010  Yes Unpublished
IIA 4.2.1.1/4 Addendum	Smalley R.	2002	Validation of Method RLA 12644 for the Analysis of Cypermethrin Isomers in Wheat Straw and Grain  BASF Agro Research, BASF plc. Gorport, UK. BASF Report No.: 4830  BASF Agro Research Unit , Gosport. UK. BASF RDI No.: AL-244-011  Yes 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 4.2.1.1/5 Addendum	Atkinson S.	2002	Validation of the Analytical Procedure Carried Out for the Analysis of Cypermethrin Isomers in Cabbage, Carrots and Lettuce Carried Out in Study 83265 CEMAS, Berkshire, UK. Report CEMS-1787 BASF Agro Research Unit , Gosport. UK. BASF RDI No.: AL-244-012 Yes Unpublished
IIA 4.2.1.1/6 Addendum	Smalley R.	2000	Method Validation of RLA 12594.01 "Analysis of Alphacypermethrin (AC900049) in Olives and Olive Oil" BASF Agro Research, BASF plc. Gorport, UK. (previously American Cyanamid) Report No.: 4560 BASF Agro Research Unit , Gosport. UK. BASF RDI No.: AL-244-007 Yes Unpublished
IIA 4.2.1.2/1 Addendum	Doran A., Mayer I. and Khunachack A.	1999	RENEGADE® Alphacypermethrin (CL 900049): Validation of Analytical Methods SAMS 461-1 and SAMS 456-1 for the Determination of Alphacypermethrin Residues in Cattle Tissues (muscle, fat, kidney and liver) and Milk. Inveresk Research, Tranent, Scotland. RES 99-014. Fort Dodge Animal Health. BASF Corporation, Princeton, NJ. USA (Previously American Cyanamid Company). Jul. 1999. BASF RDI No.: AL-245-006 Yes Unpublished
IIA 4.2.1.2/2 Addendum	Hausman S.	2000	Alphacypermethrin (CL 900049): Validation of the Multi-Residue Method DFG S 19 with Modified Extraction for the Determination of Alphacypermethrin Residues in Milk and Eggs. BASF Corporation (previously Cyanamid Forschung GmbH, Schwabenheim, Germany). REA945 (CFS); P 388G (PTRL Europe). May 2000. BASF Corporation, Princeton, US. (previously American Cyanamid Company) BASF RDI No.: AL-245-007 Yes 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 4.2.2/1 Addendum	Werle H.	1999 a	Alphacypermethrin (CL 900049): Validation of Method SAMS 354-2 for the Determination of Residues in Soils BioChem GmbH, Karlsruhe, Germany. CFS 1999-069. BASF Corporation (previously Cyanamid Forschung GmbH, Schwabenheim, Germany). Apr. 1999. BASF RDI No.: AL-242-006 Yes Unpublished
IIA 4.2.2/2 Addendum	Xu B.	2001	BAS 310 I (Alpha-cypermethrin): Validation of Method M 3499 for the Confirmation of BAS 310 I Residues in Water, Soils and Blood by GC/MS BASF Agro Research, Princeton NJ, US. BASF Report No. RES 01-058 BASF RDI No.: AL-210-012 Yes Unpublished
IIA 4.2.3/2 Addendum	Werle H.	1999 b	Alphacypermethrin (CL 900049): Validation of Method SAMS 469-2 for the Determination of Residues in Surface Water. BioChem GmbH, Karlsruhe, Germany. CFS 1999-051. BASF Corporation (previously Cyanamid Forschung GmbH, Schwabenheim, Germany). Mar. 1999. BASF RDI No.: AL-243-006 Yes Unpublished
IIA 4.2.3/3 Addendum	Xu B.	2001	BAS 310 I (Alpha-cypermethrin): Validation of Method M 3499 for the Confirmation of BAS 310 I Residues in Water, Soils and Blood by GC/MS BASF Agro Research, Princeton NJ, US. BASF Report No. RES 01-058 BASF RDI No.: AL-210-012 Yes 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 4.2.5/1 Addendum	Walker B. and Linkerhägner M.	2000 c	Alphacypermethrin (AC 900049): Validation of the DFG Method S 19 (extended revision) for the Determination of Residues of Alphacypermethrin in Blood and Urine of Animal Origin (swine). Dr. Specht & Partner, Chemische Laboratorien GMBH, Hamburg, Germany. BASF Project#AP00PT02 Sept. 2000. BASF Corporation, Princeton, NJ. USA. BASF RDI No.: AL-245-008 Yes Unpublished
IIA 4.2.5/2 Addendum	Xu B.	2001	BAS 310 I (Alpha-cypermethrin): Validation of Method M 3499 for the Confirmation of BAS 310 I Residues in Water, Soils and Blood by GC/MS BASF Agro Research, Princeton NJ, US. BASF Report No. RES 01-058 BASF RDI No.: AL-210-012 Yes Unpublished
IIA 2.9.2, 2.9.3, 2.5	Concha, M et al	2001	BAS 310I (Alphacypermethrin): Aqueous Photolysis ENV 01-037, 24 October 2001
Annex III 2.2.1/01	Steer, B.	1995	FASTAC 100 G/L EC CF05898 Measurement Of Physicochemical Properties SRC Sittingbourne SBTR.93.026 SEPT 1993
IIIA 2.2.2, 2.5.3, 2.7.1, 2.7.3	Baker, I	1995	Stability study of alphacypermethrin 100 g/l EC stored in polyethylene/polyamide co-extruded packs (2 weeks data). Report No. RLG 4056, 16 August 1995
IIIA 2.2.2, 2.5.3, 2.7.1, 2.7.3	Baker, I	1997	The physical and chemical stability of alphacypermethrin 100 g/l EC (CF05898) when stored in polyethylene/polyamide co-extruded packs - 104 week final report. RLG 4292, 1997
IIIA 2.2.2	Smalley, R	1999	Alphacypermethrin 100 g/l EC (CF05898) - Oxidising properties 25 October, 1999
IIIA 2.8.7.2	Moyle, J	2001	Dilute emulsion stability colorimetric determination (CIPAC MT 173) of Alphacypermethrin 50 and 100 g/l EC formulations. RLG 4646. 5 April 2001
IIIA 2.8.7.2	Moyle, J	2001	Dilute emulsion stability colorimetric determination (CIPAC MT 173) of Alphacypermethrin 50 and 100 g/L EC formulations RLG 4723, 2 October 2001



<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>
IIIA 2.9	Woodburn, JM	2001	Alphacypermethrin 100 g/L EC (BAS 310 11I): Compatibility of Tank Mixes RLG 4698, 23 August 2001
IIIA 4.3.1	Anon.	2002	Proposed pre-harvest intervals for envisaged uses, or withholding periods or storage periods in the case of post-harvest uses April 2002

**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 5.2.1/03	Gardner J.	1993	Fastac Technical Acute Oral and Dermal Toxicity in Rat Skin and Eye Irritancy in Rabbit and Skin Sensitization Potential in Guinea Pig SRC SBTR.92.033 BASF RDI No.: AL-410-003 Yes unpublished
IIA 5.2.3/01	Jackson G.	1993	Alphacypermethrin Acute Inhalation Toxicity in Rats 4 Hour Exposure HRC Huntingdon SLL 266/930770 BASF RDI No.: AL-413-001 Yes unpublished
IIA 5.3.1/03	Green C.	1993	Alphacypermethrin Preliminary Toxicity Study by Dietary Administration to CD-1 Mice for Four Weeks LSR EYE UK LSR 92/SHL008/0346 BASF RDI No.: AL-420-005 Yes unpublished
IIA 5.3.1/04	Fokkema G.	1993	Alphacypermethrin Fastac A 6 Week Range Finding Feeding Study in the Rat SRC Sittingbourne SBTR.93.002 BASF RDI No.: AL-420-006 No 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 5.3.2/03	Green C.	1994	Alphacypermethrin Preliminary Toxicity Study by Dietary Administration to CD-1 Mice for 13 Weeks Pharmaco-LSR Eye Suffolk UK 92/SHL009/0849 BASF RDI No.: AL-425-006 Yes unpublished
IIA 5.4.1/02	Brooks T.	1993	Fastac TM Bacterial Mutagenicity Studies SRC Sittingbourne SBTR.92.022 BASF RDI No.: AL-435-005 Yes unpublished
IIA 5.4.1/03	Wart I.	1994	Evaluation of the Mutagenic Activity of Fastac Technical in an In Vitro Mammalian Cell Gene Mutation Test with L5178Y Mouse Lymphoma Cells (with Independent Repeat) RCC Notox 087367 BASF RDI No.: AL-435-007 Yes Unpublished
IIA 5.4.1/04	Brooks T. and Wiggins D.	1993	Fastac TM: In Vitro Chromosome Studies Using Cultured Human Lymphocytes SRC Sittingbourne SBTR.93.007 BASF RDI No.: AL-435-006 Yes Unpublished
IIA 5.4.2/02	Wart I.	1995	Micronucleus Test in Bone Marrow Cells of the Mouse with Fastac Technical RCC Notox Netherlands RCC Notox 087378 BASF RDI No.: AL-435-008 Yes Unpublished
IIA 5.5/02	Dean I. and Jackson F.	1995	WL85871 A 52 Week Oral (Dietary) Toxicity Study In Dogs. IRI Report No. 11110 BASF RDI No.: AL-427-001 Yes 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 5.5/03	Green C.	1995	Alphacypermethrin Oncogenicity Study by Dietary Administration to CD 1 Mice – 52 Week Interim Report Report No. 94/SHL010/0629 BASF RDI No.: AL-428-001 Yes unpublished
IIA 5.6.2/01	Irvine L. and Twomey K.	1994	Alphacypermethrin Oral Gavage Rabbit Developmental Toxicity Dose Ranging Study Toxicol Labs Ledbury UK SLN/3/92 BASF RDI No.: AL-432-003 Yes unpublished
IIA 5.6.2/02	Irvine L.	1994	Alphacypermethrin Oral Gavage Rabbit Developmental Toxicity Teratogenicity Study Toxicol Labs Ledbury UK SLN/4/93 BASF RDI No.: AL-432-004 Yes unpublished
IIA 5.6.2/03	Irvine L. and Twomey K.	1994	Alphacypermethrin Oral Gavage Rat Developmental Toxicity Dose Ranging Study Toxicol Labs Ledbury UK SLN/1/92 BASF RDI No.: AL-432-001 Yes unpublished
IIA 5.6.2/04	Irvine L.	1994	Alphacypermethrin Oral Gavage Rat Developmental Toxicity Teratogenicity Study Toxicol Labs Ledbury UK SLN/2/92 BASF RDI No.: AL-432-002 Yes unpublished
IIA 5.7/01	Fokkema G.	1994	WL85871 FASTAC An Acute Oral Gavage Neurotoxicity Study in the Rat SRC Sittingbourne SBTR.92.027 BASF RDI No.: AL-451-004 Yes unpublished
IIA 5.4.2, 5.6/5.7	Pendino, KJ & Ponnock KS	1999	Alphacypermethrin: Response to toxicology and exposure concerns raised in the EU draft monograph

<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>
Annex III 7.1.3./01	Jackson,G. Molloy,G.	1993	FASTAC 100 G/L EC Acute Inhalation Toxicity Study In Rats 4 Hour Exposure SLL/269/930776 JUL 1993
Annex III 7.1.6/01	Gardner,J.	1993	FASTAC 100 G/L EC CF05898 Skin Sensitization Potential In Guinea Pig SRC Sittingbourne SBTR.93.031 SEPT 1993

**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	Chapleo S.	2000	FASTAC Alpha-Cypermethrin (CL 900049) : Metabolism of 14C-CL 900049 in Wheat (Interim report), 2000 – BASF. yes
IIA 6.2	Mc Combe W.S. & Phillips M.	2000	FASTAC Alpha-Cypermethrin (CL 900049) : Metabolism of 14C-CL 900049 in Laying Hen (Status Report), 2000 – BASF. Yes
IIA 6.5.1/6.5. 2	Afzal J.	-	Protocol Title : “AC 900049 : Effects of Processing on the Nature of the Residues Due to Hydrolysis.” – BASF. Yes
IIA 6.1/1 Addendum	Chapleo S., White D.E. and Allan J.	2001	FASTAC® Alphacypermethrin (BAS 310I, CL 900049): Metabolism of [14C]-CL 900049 in Wheat /Report Amendment No. 1 to Final Report “FASTAC® Alphacypermethrin (BAS 310I, CL 900049): Metabolism of [14C]-CL900049 in Wheat” -- Correct a typographic error in the cover page of the report Inveresk Agro Research 19157. BASF Agro Research MET 01-012 BASF RDI No.: AL-640-004 Yes 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 6.2/1 Addendum	McCombe W.S. and Phillips M.	2001	FASTAC® Alphacypermethrin (BAS 310 I; CL900049): Metabolism of [14C] CL 900049 in Laying Hen Inveresk Agro Research 18949. BASF Agro Research MET 01-005 BASF RDI No.: AL-440-021 Yes Unpublished
IIA 6.3.1.1/1 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 100 g as/kg EC (CF5898): Decline Curve Residue Study on Alphacypermethrin in Winter Wheat, South France, 2000. European Agricultural Services Report No. AL-FR-00- 603 BASF RDI No.: AL-730-067 Yes Unpublished
IIA 6.3.1.2/1 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203): At Harvest Residue Study on Alphacypermethrin in Head Cabbage, Hellas, 2000. European Agricultural Services Report No. AL-HE-00- 611. BASF RDI No.: AL-721-045 Yes Unpublished
IIA 6.3.1.2/2 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203): Decline Curve Residue Study on Alphacypermethrin in Head Cabbage, Hellas, 2000. European Agricultural Services Report No. AL-HE-00- 612. BASF RDI No.: AL-721-046 Yes Unpublished
IIA 6.3.1.2/3 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203): At Harvest Residue Study on Alphacypermethrin in Head Cabbage, South France, 2000. European Agricultural Services Report No. AL-FR-00- 609 BASF RDI No.: AL-721-043 Yes 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 6.3.1.2/4 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/kg WG (RLM 11203): Decline Curve Residue Study on Alphacypermethrin in Head Cabbage, South France, 2000. European Agricultural Services Report No. AL-FR-00-610 BASF RDI No.: AL-721-047 Yes Unpublished
IIA 6.3.1.2/5 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/ WG (RLM 11203): At Harvest Residue Study on Alphacypermethrin in Head Cabbage, Italy, 2000. European Agricultural Services Report No. AL-IT-00-604 BASF RDI No.: AL-721-042 Yes Unpublished
IIA 6.3.1.2/6 Addendum	Jones S.	2002	Study on the Residue Behaviour of BAS 310 I in Cabbage After Application of BAS 310 I 08 Under Field Conditions in Spain and Italy, 2001. BASF- plc, BASF Agro Research, Gosport UK. Report No.: 4817 BASF RDI No.: AL-721-048 Yes Unpublished
IIA 6.3.1.2/7 Addendum	Bamber A.	2001	Alphacypermethrin (AC 900049) 150 g a.s/kg WG (RLF 12152) and 100 g a.s/L EC (CF 05898): Decline Curve Residue Study on Alphacypermethrin in Headed Cabbage, UK, 2000 Oxford Agricultural Trials Ltd (OAT) UK. Report No.: OAT1 BASF RDI No.: AL-440-019 Yes 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 6.3.1.2/8 Addendum	Bamber A.	2001	Alphacypermethrin (AC 900049) 150 g a.s/kg WG (RLF 12152) and 100 g a.s/L EC (CF 05898): Decline Curve Residue Study on Alphacypermethrin in Headed Cabbage, UK, 2000 Oxford Agricultural Trials Ltd (OAT) UK. Report No.: OAT2 BASF RDI No.: AL-440-020 Yes Unpublished
IIA 6.3.1.2/9 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/ WG (RLM 11203): At Harvest Residue Study on Alphacypermethrin in Head Cabbage, and processed fractions (cooked and sauerkraut), Italy, 2000. European Agricultural Services Report No. AL-IT-00-605 BASF RDI No.: AL-721-044 Yes Unpublished
IIA 6.3.1.3/1 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/ WG (RLM 11203): At Harvest Residue Study on Alphacypermethrin in Oil Seed Rape and Oil, South France, 2000 European Agricultural Services Report No. AL-FR-00-602 BASF RDI No.: AL-750-038 Yes Unpublished
IIA 6.3.1.3/2 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/ WG (RLM 11203): Decline Curve Residue Study on Alphacypermethrin in Oil Seed Rape and Oil, South France, 2000 European Agricultural Services Report No. AL-FR-00-601 BASF RDI No.: AL-750-039 Yes 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 6.3.1.3/3 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/ WG (RLM 11203): Decline Curve Residue Study on Alphacypermethrin in Oil Seed Rape, Germany, 2000 European Agricultural Services Report No. AL-GE-00-999 BASF RDI No.: AL-750-037 Yes Unpublished
IIA 6.3.1.3/4 Addendum	Trewhitt J. and Zimmermann U.	2002	Study on the Residue Behavior of Alphacypermethrin (AC 900049) in Winter Oil Seed Rape After Treatment with BAS 310 08 I Under Field Conditions in France (S) and Spain, 2001 BASF Agricultural Center Limburgerhof, Germany Report No. 4807 BASF RDI No.: AL-750-041 Yes Unpublished
IIA 6.3.2.1/1 Addendum	Müller U.	1998	Alphacypermethrin (CL 900049): Storage Stability of CL 900049 Residues at < -18 °C in Lettuce (Germany, 1997) Residue Laboratory, CFS-DER Report Number CFS 1998-026 BASF RDI No.: AL-726-015 Yes Unpublished
IIA 6.3.2.2/1 Addendum	Müller U.	1998	Alphacypermethrin (CL 900049): Storage Stability of CL 900049 Residues at < -18 °C in Cereal Whole Green Plant, Grain and Straw (Germany, 1997) Residue Laboratory, CFS-DER Report Number CFS 1998-097 BASF RDI No.: AL-730-066 Yes Unpublished
IIA 6.3.2.3/1 Addendum	Smalley R.	2002	Alphacypermethrin Freezer Storage Stability in Oil Seed Rape (Whole Plant, Whole Pod and Seed) BASF Agro Research, PLC, Gosport. Report Number 4807 BASF RDI No.: AL-750-040 Yes 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 6.3.2.3/2 Addendum	Dale T.	2002	Alphacypermethrin _ Freezer Storage Stability in Oil Seed Rape (Whole Plant, Whole Pod and Seed). Interim Report. BASF Agro Research, PLC, Gosport. Report Number 4832 BASF RDI No.: AL-730-068 Yes Unpublished
IIA 6.4.1 Addendum	Horton W.E.	2001	FASTAC® Insecticide (Alphacypermethrin, CL 900049, BAS 310 I): Magnitude of Alphacypermethrin Residues in the Milk and Edible Tissues of Dairy Cattle Following Oral Administration for Twenty-Eight (28) Consecutive Days. BASF Agro Research Protocol Number AP00PT01 BASF RDI No.: AL-705-006 Yes Unpublished
IIA 6.4.2 Addendum	Fletcher P.	2001	FASTAC® Insecticide (Alphacypermethrin -BAS 310 I): Magnitude of BAS 310 I Residues in Laying Hen Eggs, Muscle, Liver and Abdominal Fat After Oral Administration of BAS 310 I for 28 Consecutive Days. BASF Agro Research and Forth Dodge Animal Health. Study Code AP00PT06 and Report No. RES 00-052 BASF RDI No.: AL-440-018 Yes Unpublished
IIA 6.4.4 Addendum	Bixler T. and Kukel C.	2001	CL 900049 (alpha-cypermethrin): Solubility in Acetone: Hexane, Stability in Hexane and Freezer Storage Stability of CL 900049 Residues in Cattle Tissues (Muscle, Liver, Kidney and Fat) and Milk Maxim Technologies, Inc. Middleport, NY. Study Code AP00PT05 and Report No. RES 01-002 BASF RDI No.: AL-326-035 Yes 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 6.5.1 Addendum	Afzal J.	2001	BAS 310 I (AC 900049): Effects of Processing on the Nature of the Residues due to Hydrolysis BASF Corporation, BASF Agro Research, Princeton, NJ. BASF Report Number ENV 01-006 and Report Amendment. BASF RDI No.: AL-790-046 Yes Unpublished
IIA 6.5.2.1/1 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/ WG (RLM 11203): At Harvest Residue Study on Alphacypermethrin in Head Cabbage, and Processed Fractions (cooked and sauerkraut), Italy, 2000. European Agricultural Services Report No. AL-IT-00-605 BASF RDI No.: AL-721-044 Yes Unpublished
IIA 6.5.2.1/2 Addendum	Pollmann B.	2002	Determination of Residues of Alphacypermethrin in Field Samples and in Processed Goods after Application of BAS 310 08 I in Head Cabbage at 3 Sites in Germany in 2001 Arbeitsgemeinschaft GAB/Biotechnologie GmbH & IFU Umweltanalytik GmbH. Report No. 20011245/G1-FPCA BASF DocID 2002/1004078 Yes Unpublished
IIA 6.5.2.2/1 Addendum	Grolleau G.	2001	Alphacypermethrin (AC 900049) 150 g as/ WG (RLM 11203): At Harvest Residue Study on Alphacypermethrin in Oil Seed Rape and Oil, South France, 2000 European Agricultural Services Report No. AL-FR-00-602 BASF RDI No.: AL-750-038 Yes Unpublished
IIA 6.5.2.2/2 Addendum	Trewhitt J. and Zimmermann U.	2002	Processing Study on the Residue Behavior of Alphacypermethrin in Oil Seed Rape After Application of BAS 310 08 I Under Field Conditions in France (S), 2001. BASF Agricultural Center, Limburgerhof, Germany Report No. 92807. BASF DocID 2002/1004088 BASF RDI No.: AL-750-042 Yes 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 6.6/1 Addendum	Groulleau G.	2002	Alphacypermethrin (AC 900049) 150 g a.s./kg WG (RLM 11203): Residue Determination in Rotational Crops, Italy 2000.  European Agricultural Service (EAS), Lyon France. Report AL-IT-00-608  BASF RDI No.: AL-790-049  Yes  Unpublished
IIA 6.6/2 Addendum	Smalley R.	2002	Study on the Residue Behaviour of Alphacypermethrin in Lettuce, Carrots, Cabbage and Wheat after Application of BAS 310 I Under Field Conditions in France (N and S) and the United Kingdom, 2001  BASF, PLC Agro Research, Gosport UK. Report No.: 4803  BASF RDI No.: AL-790-048  Yes  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>
IIA 7.1.1.1.1/5 Addendum	Gedik L. and Kiers D.	2001	[14C]-Alphacypermethrin (BAS 310 I): Degradation in Soil Under Aerobic Conditions  Inveresk Research, Tranent, Scotland, UK. E-00-37.  BASF RDI No.: AL-620-013  Yes  Unpublished
IIA 7.1.1.2.1/1 Addendum	Gedik L. and Kiers D.	2001	[14C]-Alphacypermethrin (BAS 310 I): Degradation in Soil Under Aerobic Conditions  Inveresk Research, Tranent, Scotland, UK. E-00-037  BASF RDI No.: AL-620-013  Yes  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 7.1.1.2.1/ 3 Addendum	Beigel C.	2002	Calculation of DT50 and DT90 Values of 3-phenoxyBenzoic acid (metabolite of cypermethrin and alphacypermethrin) in Two Soils Treated with Cis-cypermethrin BASF Corporation, Princeton, New Jersey, United States BASF RDI No.: AL-620-014 No Unpublished
IIA 7.1.2/4 Addendum	Holman J.	2002	14C - CL 206128 (Metabolite of BAS 310 I, alphacypermethrin): Adsorption/Desorption on Soils BASF Corporation, Princeton, New Jersey, United States BASF RDI No.: AL-620-015 Yes Unpublished
IIA 7.2.1.2/4 Addendum	Concha M., Yan Z. and Beigel C.	2001	Alphacypermethrin (BAS 310 I): Aqueous Photolysis PTRL West Inc., Richmond, CA, USA. BASF Study No. E-00-009 BASF RDI No.: AL-324-003 Yes unpublished
IIA 7.2.1.3.2/ 5 Addendum	Beigel C.	2001 a	Calculation of First-Order DT50 and DT90 Values of Alphacypermethrin in the Water and Sediment Phases of River-Sediment and Pond-Sediment Aquatic Systems. BASF Agro Research, Princeton, New Jersey, United States BASF RDI No.: AL-630-015 No Unpublished
IIA 7.2.1.3.2/ 6 Addendum	Beigel C.	2001 b	Calculation of DT50 and DT90 Values of Alphacypermethrin Metabolites CL 206128 and CL 912554 in River-Sediment and Pond-Sediment Aquatic Systems. BASF Agro Research, Princeton, New Jersey, United States BASF RDI No.: AL-630-014 No 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 7.2.2/1	Mangels G.	1995	Alphacypermethrin: Estimation of the Photochemical Oxidation Rate in the Atmosphere American Cyanamid Co. Cyanamid Agricultural Research Center, Princeton, New Jersey, United States. ENV 95-017 BASF RDI No.: AL-324-002 No Unpublished
IIA 7.1.1.2.1	Keirs, DC	2000	Status report and protocol: [14C]-Alphacypermethrin (AC 900049): Degradation in soil under aerobic conditions
IIA 7.1.2	Poyntz, B	2002	Assessment of the relevance of alphacypermethrin metabolite 3-phenoxybenzoic acid to groundwater April 2002
IIA 7.1.2	Beigel C.	2002	FOCUS Tier 1 Leaching Risk Assessment of CL 206128 (3-Phenoxybenzoic Acid), Soil Metabolite of BAS 310 I (Alphacypermethrin) Associated with Use of FASTAC <sup>®</sup> (Alphacypermethrin 100 g L <sup>-1</sup> EC) to Cereals, Cabbage and Oilseed Rape in the EU. EXA 02-007, 2002
IIA 7.1.2	Holman R.	2002	<sup>14</sup> C-CL 206128 (Metabolite of BAS 310 I, alphacypermethrin): Adsorption/Desorption on Soils. BASF Agro Research, Ewing, New Jersey, United States. ENV 02-004, 2002
IIA7.2.1	Beigel, C	2001	Calculation of First-Order DT50 and DT90 Values of Alphacypermethrin in the Water and Sediment Phases of River-Sediment and Pond-Sediment Aquatic Systems EXA-01-023, 20 June 2001
IIA7.2.1	Beigel, C	2001	Calculation of DT50 and DT90 Values of Alphacypermethrin Metabolites CL 206128 and CL 912554 in River-Sediment and Pond-Sediment Aquatic Systems EXA-01-006, 31 January 2001
IIIA 9.2.1, 9.2.3	Beigel, C	2001	Predicted Environmental Concentrations of Alphacypermethrin in Soil, Groundwater, Surface Water, and Sediment Following Applications of FASTAC (Alphacypermethrin 100 g L <sup>-1</sup> EC) to Cereals, Cabbage and Oilseed Rape in the EU. EXA-01-034, 24 August 2001

<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>
IIIA 9.2.1, 9.2.3	Beigel, C	2001	Predicted environmental concentrations of alphacypermethrin in soil, groundwater, surface water, and sediment following applications of FASTAC (alphacypermethrin 100 g L <sup>-1</sup> EC) to cereals, cabbage and oilseed rape in the EU. BASF Agro Research, Princeton, New Jersey, United States. BASF amended Report Number EXA 01-034.01, 2001
IIIA 9.2.1, 9.2.3	Beigel C.	2002	Predicted environmental concentrations of alphacypermethrin in soil, groundwater, surface water, and sediment following applications of FASTAC(alphacypermethrin 100 g L <sup>-1</sup> EC) to cereals, cabbage and oilseed rape in the EU. BASF Agro Research, Princeton, New Jersey, United States. BASF amended Report Number EXA 01-034.02, 2002

**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 8.1.1 Addendum	Helsten B. and Ahmed M.S.	2000	Avian Acute Oral Toxicity Test with Alphacypermethrin (AC 900049) Technical in Northern Bobwhites (Colinus virginianus). Bio-Life Associates Ltd Study #: 105-046-03 BASF RDI No.: AL-505-002 Yes Unpublished
IIA 8.1.2 Addendum	Rodgers M. and Ahmed M.S.	2001	Alphacypermethrin (BAS 310I) Dietary Toxicity (LC50) to the Northern Bobwhite (Colinus virginianus). Huntingdon Life Sciences. Study #: CYD/632/013017 BASF RDI No.: AL-534-003 Yes 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 8.1.3 Addendum	Rodgers M. and Ahmed M.S.	2001	Alphacypermethrin (BAS 310I) Assessment to Determine the Effects on Reproduction in Northern Bobwhite ( <i>Colinus virginianus</i> ). Vol 1-2-3. Huntingdon Life Sciences. Study #: CYD/630 BASF RDI No.: AL-534-002 Yes Unpublished
IIA 8.2.1/1 Addendum	Zok S.	2002	CL 912554 (Metabolite of BAS 310I, Alpha-Cypermethrin) Acute Toxicity Study on the Bluegill Sunfish ( <i>Lepomis macrochirus</i> ) in a Static System Over 96 Hours BASF Aktiengesellschaft, Ludwigshafen, Germany BASF RegDoc# 2002/1004682 MARCH 2002 BAS RDI No.: AL-570-011 Yes Unpublished
IIA 8.2.1/2 Addendum	Zok S.	2002	CL 206128 (Metabolite of BAS 310I, Alpha-Cypermethrin) Acute Toxicity Study on the Bluegill Sunfish ( <i>Lepomis macrochirus</i> ) in a Static System Over 96 Hours BASF Aktiengesellschaft, Ludwigshafen, Germany MAR 2002 BAS RDI No.: AL-570-013 Yes Unpublished
IIA 8.2.4/1 Addendum	Jatzek J.	2001	Reg. No. 4080830: Determination of the Acute Effect on the Swimming Ability of the Water Flea <i>Daphnia magna</i> STRAUS BASF Aktiengesellschaft, Ludwigshafen, Germany Study No. 01/0420/50/1 BASF RegDoc# 2001/1017462 NOV 2001 BASF RDI No.: AL-520-001 Yes 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 8.2.4/2 Addendum	Jatzek J.	2001	CL 206128 (Metabolite of BAS 310I, $\alpha$ -Cypermethrin): Determination of the Acute Effect on the Swimming Ability of the Water Flea Daphnia magna STRAUS BASF Aktiengesellschaft, Ludwigshafen, Germany, Study No. 01/0418/50/1 BASF RegDoc# 2001/1014673 SEPT 2001 BASF RDI No.: AL-570-008 Yes Unpublished
IIA 8.2.4/3 Addendum	Jatzek J.	2002	CL 206969 - Determination of the Acute Effect on the Swimming Ability of the Water Flea Daphnia magna STRAUS BASF Aktiengesellschaft, Ludwigshafen, Germany Study No. 01/0420/50/1 BASF RegDoc# 2002/1004857 MAR 2002 BASF RDI No.: AL-570-012 Yes Unpublished
IIA 8.2.6/1 Addendum	Jatzek J.	2002	BAS 310 I- Determination of Inhibitory Effect on the Cell Multiplication of Unicellular Green Algae BASF Aktiengesellschaft, Ludwigshafen, Germany Study No. 01/0265/60/1 BASF RDI No.: AL-520-002 MAR 2002 Yes Unpublished
IIA 8.2.6/2 Addendum	Werner D. I.	2002	CL 912554 (Metabolite of BAS 310I, $\alpha$ -Cypermethrin): Determination of Inhibitory Effect on the Cell Multiplication of Unicellular Green Algae BASF Aktiengesellschaft, Ludwigshafen, Germany Study No. 01/0420/60/2 BASF RegDoc# 2002/1004139 FEB 2002 BASF RDI No.: AL-570-009 Yes 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 8.2.6/3 Addendum	Werner D. I.	2002	CL 206128 (Metabolite of BAS 310I, $\alpha$ -Cypermethrin): Determination of Inhibitory Effect on the Cell Multiplication of Unicellular Green Algae BASF Aktiengesellschaft, Ludwigshafen, Germany Study No. 01/0418/60/2 BASF RegDoc# 2002/1004140 FEB 2002 BASF RDI No.: AL-570-010 Yes Unpublished
IIA 8.4.1/2 Addendum	Staab F.	2001 a	Effect of Metabolite CL 206128 (Metabolite of alpha-Cypermethrin) on the Mortality of the Earthworm <i>Eisenia foetida</i> BASF Aktiengesellschaft, Limburgerhof, Germany Study No. 108413 BASF RegDoc# 2002/1014597 AUG 2001 BASF RDI No.: AL-570-002 Yes Unpublished
IIA 8.4.1/3 Addendum	Staab F.	2001 b	Effect of Metabolite CL 912554 (Metabolite of alpha-Cypermethrin) on the Mortality of the Earthworm <i>Eisenia foetida</i> BASF Aktiengesellschaft, Limburgerhof, Germany Study No. 108441 BASF RegDoc# 2002/1014603 AUG 2001 BASF RDI No.: AL-570-003 Yes Unpublished
IIA 8.4.2 Addendum	Lühns U.	2001	Effects of Alphacypermethrin (AC 900049) in a 100 g/L Oil Emulsion Suspension Concentrate Formulation (FASTAC* 10% OESC) (CF 06677) on Reproduction and Growth of Earthworm, <i>Eisenia fetida</i> , (Savigny 1826) in Artificial Soil IBACON GmbH, Rossdorf, Germany Study No. ETX-00-129 FEB 2001 BASF RDI No.: AL-560-041 Yes 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 8.5/1 Addendum	Chapleo S. and Strnad S.	2000	The Effect of Alpha-cypermethrin (AC 900049) in a 100 g L-1 OESC Formulation on Carbon and Nitrogen Transformations of the Soil Microflora IBACON Gmbh, Rossdorf, Germany Study No. ETX-00-108 APR 2000 BASF RDI No.: AL-560-026 Yes Unpublished
IIA 8.5/2 Addendum	Krieg W.	2001 a	Effect of CL 206128 (Metabolite of Alpha-cypermethrin) on Soil Micro-organisms: Carbon Transformation Test BASF Aktiengesellschaft, Limburgerhof, Germany Study No. 108409 SEP 2001 BASF RegDoc# 2001/1014604 BASF RDI No.: AL-570-005 Yes Unpublished
IIA 8.5/3 Addendum	Krieg W.	2001 b	Effect of CL 912554 (Metabolite of Alpha-cypermethrin) on Soil Micro-organisms: Carbon Transformation Test BASF Aktiengesellschaft, Limburgerhof, Germany Study No. 108437 SEP 2001 BASF RegDoc# 2001/1014605 BASF RDI No.: AL-570-004 Yes Unpublished
IIA 8.5/4 Addendum	Krieg W.	2001 c	Effect of CL 206128 (Metabolite of Alpha-cypermethrin ) on Soil Micro-organisms: Nitrogen Transformation Test BASF Aktiengesellschaft, Limburgerhof, Germany Study No. 108411 SEP 2001 BASF RegDoc# 2001/1014669 BASF RDI No.: AL-570-006 Yes 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 8.5/5 Addendum	Krieg W.	2001 d	Effect of CL 912554 (Metabolite of Alpha-cypermethrin ) on Soil Micro-organisms: Nitrogen Transformation Test BASF Aktiengesellschaft, Limburgerhof, Germany Study No. 108439 SEP 2001 BASF RegDoc# 2001/1014670 BASF RDI No.: AL-570-007 Yes Unpublished
IIA 8.7 Addendum	Lebertz H. and Zhjixing Y.	2001	Alphacypermethrin (BAS 310 I): Activated Sludge. Respiration Test Institut Fresenius, Taunusstein, Germany. Study No. E-00-011. MAR 2001 BASF RDI No.: AL-690-005 Yes Unpublished
IIIA 10.2.1/1 Addendum	Funk M. Huber W. and Mitchell G. C.	2000	Acute Toxicity of Alphacypermethrin (AC 900049) in a 100 g/L OESC Formulation (CF 06677) to Aquatic Macroinvertebrates Institute of Aquatic Ecotoxicology (IAE), Kungelpoint 26, D-84172 Buch a. Erlbach, Germany ECO-00-217 OCT 15, 2000 BASF RDI No.: AL-560-054 No Unpublished
IIIA 10.2.2/1 Addendum	Huber W., Mitchell G. C., Zeiris F. J., Neugebaur- Buchler K. and Cascorbi U.	2000	Evaluation of Effects of a 100 g/L SC Formulation (CF 06677) of AC 900049 (Alphacypermethrin) on Macroinvertebrates, Zooplankton, and Algae in Enclosures in Ponds Institute of Aquatic Ecotoxicology (IAE), Kungelpoint 26, D-84172 Buch a. Erlbach, Germany ECO-97-144 OCT 1, 2000 BASF RDI No.: AL-560-031 No Unpublished

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IIIA 10.2.2/2 Addendum	Huber W., Zeiris F. J., Meyer-Tuve H., Nunn A., Sandmann E., Mitchell G. C. and Horton W.	2000	Evaluation of Possible Effects of a 100 g/L SC Formulation (CF 06677) of AC 900049 (Alphacypermethrin) on Macroinvertebrates, Zooplankton, and Algae in Pond-Enclosures and Determination of the Ecologically Acceptable Concentration (EAC)  Institute of Aquatic Ecotoxicology (IAE), Kungelpoint 26, D-84172 Buch a. Erlbach, Germany ETX-99-101.01 March 9, 2000  BASF RDI No.: AL-560-023  Yes  Unpublished
IIIA 10.2.2/2 Addendum	Huber W.	2000 b	Summary of an Expert Panel Opinion of the Study "Evaluation of Possible Effects of a 100 g/L SC Formulation (CF 06677) of AC 900049 (Alphacypermethrin) on Macroinvertebrates, Zooplankton, and Algae in Pond-Enclosures and Determination of the Ecologically Acceptable Concentration (EAC)  Institute of Aquatic Ecotoxicology (IAE), Kungelpoint 26, D-84172 Buch a. Erlbach, Germany 2000/I JULY 31, 2000  BASF RDI No.: AL-560-033  N/A  Unpublished
IIA 8.1.1	Helsten, BR, & Sayed Ahmed	2000	Avian acute oral toxicity test with Alphacypermethrin (AC 900049) technical in Northern Bobwhites ( <i>Colinus virginianus</i> ). ETX-00-107, 1 September 2000.
IIA 8.2.4	Memmert, U & Schreitmuller, J.	1996	Acute toxicity of Fastac 10 OESC to <i>Daphnia magna</i> . RCC-D 527301. 30 April 1996
IIA 8.2.4	Schreitmuller, J	1996	Analytical method validation report RCC-D 527302, 30 April 1996
IIA 8.2.7	Heintze	1997	Alphacypermethrin (AC 900049): Effects on the development of sediment-dwelling larvae of <i>Chironomus riparius</i> in a water-sediment system. AL 523-002. 1997
IIA 8.2 IIIA 10.4	Mitchell, G	2000	Overview of a higher tier evaluation of the potential effects of FASTAC insecticide (alphacypermethrin) on aquatic organisms. November 2000
IIA 8.2 IIIA 10.4	Huber, W	2000	Evaluation of an Ecological Acceptable Concentration (EAC) for Alphacypermethrin in Aquatic Environments. Report No 2000/II, 1 October 2000

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IIA 8.2 IIIA 10.4	Huber, W	2000	Summary of an Expert panel Opinion of the study "Evaluation of Possible Effects of a 100 g/L SC Formulation (CF 06677) of AC 900049 (alphacypermethrin) on Macro-invertebrates, Zooplankton and Algae in Pond-Enclosures and Determination of the Ecologically Acceptable Concentration (EAC)" 2000/I, 31 July 2000
IIA 8.2 IIIA 10.4	Funk, M et al	2000	Acute toxicity of Alphacypermethrin (AC 900049) in a 100 g/l OESC formulation (CF06677) to aquatic macroinvertebrates. Report No ECO 00-217, 15 October 2000
IIA 8.2 IIIA 10.4	Mitchell, GC	2000	Evaluation of Possible Effects of a 100 g/l SC Formulation (CF 06677) of AC 900049 (alphacypermethrin) on Macro-invertebrates, Zooplankton and Algae in Pond-Enclosures and Determination of the Ecologically Acceptable Concentration (EAC) ETX-99-101, 9 March 2000
IIA 8.2 IIIA 10.4	Huber, W et al	2000	Evaluation of possible effects of a 100 g/l SC Formulation (CF06677) of AC 900049 (Alphacypermethrin) on Macroinvertebrates, Zooplankton, and Algae in Ponds. Report No. ECO-97-144, 1 October 2000.
IIA 8.3.2 IIIA 10.5	Vinall, S & Strnad S	2000	A laboratory test to determine the effects of Alphacypermethrin (AC 900049), in a 100 g/l OESC Formulation (CF06677) on the predatory mite, Typhlodromus pyri (Phytoseiidae). Report No ETX-99-206, 31 May 2000.
IIA 8.3.2 IIIA 10.5	Baxter, I & Strnad S	2000	An extended laboratory test to determine the effects of Alphacypermethrin (AC 900049), in a 100 g/l OESC Formulation (CF06677) on the parasitic wasp, Aphidius rhopalosiphi (Hymenoptera, Braconidae). Report No ETX-99-205, 16 October 2000.
IIA 8.3.2 IIIA 10.5.1 IIIA 10.6.2	Strnad, S	2002	Alphacypermethrin: Assessment of the risk to non-target arthropods April 2002
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the predatory mite, Typhlodromus pyri (Acarina, Phytoseiidae). ETX-00-332, 2001
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLM 11203), on the predatory mite, Typhlodromus pyri (Acarina, Phytoseiidae). ETX-00-334, 2001

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IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L EC formulation (CF 05898), on the predatory mite, Typhlodromus pyri (Acarina, Phytoseiidae). ETX-00-330, 2001
IIA 8.3.2 IIIA 10.5.1	Taruza S	2001	An extended laboratory test to determine the effects of fresh and aged residues of the insecticide alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the predatory mite, Typhlodromus pyri (Phytoseiidae). ETX-00-260, 2001
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad	2002	A rate-response extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on the predatory mite, Typhlodromus pyri (Acari: Phytoseiidae). 67278, 2002
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S	2002	An aged-residue extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on the predatory mite, Typhlodromus pyri (Phytoseiidae). 108449, 2002
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the parasitic wasp, Aphidius rhopalosiphi (Hymenoptera, Braconidae). ETX-00-331, 2001
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLM 11023), on the parasitic wasp, Aphidius rhopalosiphi (Hymenoptera, Braconidae). ETX-00-333, 2001
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2001	A rate-response laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L EC formulation (CF 05898), on the parasitic wasp, Aphidius rhopalosiphi (Hymenoptera, Braconidae). ETX-00-329, 2001
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2002	A rate-response extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on parasitic wasp Aphidius rhopalosiphi (Hymenoptera, Braconidae). BASF-01-24, 2002
IIA 8.3.2 IIIA 10.5.1	Baxter I. and Strnad S	2001	An extended laboratory test to determine the effects of fresh residues of the insecticide alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLF 12152), on parasitic wasp Aphidius rhopalosiphi. ETX-00-200, 2001

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IIA 8.3.2 IIIA 10.5.1	Baxter I.	2000	An extended laboratory test to determine the effects of fresh residues of the insecticide alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLF 12152), on the ground-dwelling spiders of the genus <i>Pardosa</i> (Araneae, Lycosidae). ETX-00-202, 2000
IIA 8.3.2 IIIA 10.5.1	Baxter I. and Strnad S	2000	A laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the ground-dwelling predator, <i>Poecilus cupreus</i> (Coleoptera, Carabidae). ETX-99-207, 2000
IIA 8.3.2 IIIA 10.5.1	Baxter I. and Strnad S	2000	An extended laboratory test to determine the effects of fresh residues of the insecticide alpha-cypermethrin (AC 900049), in a 150 g/kg WG formulation (RLF 12152), on the ground-dwelling predator, <i>Poecilus cupreus</i> (Coleoptera, Carabidae). ETX-00-203, 2000
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2000	A laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the ground-dwelling parasitic beetle, <i>Aleochara bilineata</i> (Coleoptera, Staphylinidae). ETX-99-208, 2000
IIA 8.3.2 IIIA 10.5.1	Taruza S. and Strnad S.	2001	An extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (CF 06677), on the ground-dwelling parasitic beetle, <i>Aleochara bilineata</i> (Coleoptera, Staphylinidae). ETX-00-261, 2001
IIA 8.3.2 IIIA 10.5.1	Vinall S. and Strnad S	2002	A rate-response extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049) in a 100 g/L OESC formulation (BAS 310 I), on the foliar-active predator, <i>Orius laevigatus</i> (Heteroptera; Anthracoridae). 108455, 2002
IIA 8.3.2 IIIA 10.5.1	Manley B	2002	A rate-response extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on foliar-active predator, <i>Chrysoperla carnea</i> (Neuroptera, Chrysopidae). 108453, 2002
IIA 8.3.2 IIIA 10.5.1	Manley B	2002	An aged-residue extended laboratory test to determine the effects of alpha-cypermethrin (AC 900049), in a 100 g/L OESC formulation (BAS 310 I), on the foliar-active predator, <i>Chrysoperla carnea</i> (Neuroptera: Chrysopidae). 108451, 2002
IIA 8.5 IIIA 10.7 IIIA 10.6.2	Chapleo, S, & Strnad S	2000	The effect of Alphacypermethrin (AC 900049) in a 100 g/l OESC formulation on Carbon and Nitrogen Transformations of the soil Microflora. Report No. ETX-00-108, 6 April 2000.

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IIA8.7	Lebertz, H & Yan Z	2001	Alphacypermethrin (BAS 310I): Activated sludge, Respiration Inhibition Test (Report Amendment #1) ENV 00-023.01, 30 March 2001
IIIA 10.1	Anon.	-	Assessment of the dietary risk of alphacypermethrin to birds
IIIA 10.4.4	Kleiner, R	1998	Testing toxicity to honeybee - <i>Apis mellifera</i> L. (under field conditions) based on BBA guideline VI, 23-1 (1991) and EPPO guideline No 170 (1992), Alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) (Application rate: single maximum field application rates (125 and 175 ml/ha)). AC study no. 954-96-222, 1998
IIIA 10.4.4	Muhlen, W	1999 8	Assessment of the side effects of alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) on honeybees ( <i>Apis mellifera</i> L.) under natural conditions in the field. AC study no. 954-96-266, 1998.
IIIA 10.4.4	Muhlen, W	1998	Assessment of the side effects of alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) on honeybees ( <i>Apis mellifera</i> L.) under natural conditions in the field. AC study no. 954-96-267, 1998.
IIIA 10.4.4	Muhlen, W	1998	Assessment of the side effects of alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) on honeybees ( <i>Apis mellifera</i> L.) under natural conditions in the field. AC study no. 954-96-220, 1998.
IIIA 10.4.4	Nengel, S	1998	Alphacypermethrin (CL 900049) 100 gai/l EC (CF05898). The effects on the honey bee ( <i>Apis mellifera</i> L.) in the field following application during bee flight (application rate: single maximum field application rate) AC study no. 954-96-219, 1998.
IIIA 10.4.4	Otten, C	1998	Assessment of the side effects of alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) on honeybees ( <i>Apis mellifera</i> L.) under natural conditions in the field. AC study no. 954-96-272, 1998.
IIIA 10.4.4	Nengel, S	1998	Alphacypermethrin (CL 900049) 100 gai/l SC (CF06677). The effects on the honey bee ( <i>Apis mellifera</i> L.) in the field following application during bee flight (application rate: single maximum field application rate) AC study no. 954-96-265, 1998.
IIIA 10.4.4	Schmitzer, S	1998	Toxicity testing of alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) to Honey Bees ( <i>Apis mellifera</i> L.) (Hymenoptera: Apidae) in the field. AC study no. 954-96-268, 1998
IIIA 10.4.4	Schmitzer, S	1998	Toxicity testing of alphacypermethrin (CL 900049) 100 gai/l EC (CF05898) to Honey Bees ( <i>Apis mellifera</i> L.) (Hymenoptera: Apidae) in the field. AC study no. 954-96-221, 1998



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IIIA 10.4.4	Nengel, S	1998	Alphacypermethrin (CL 900049) 100 gai/l SC (CF06677). The effects on the honey bee ( <i>Apis mellifera</i> L.) in the field following application during bee flight (application rate: single maximum field application rate) AC study no. 954-96-270, 1998.
IIIA 10.4.4	Schmitzer, S	1998	Toxicity testing of alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) to Honey Bees ( <i>Apis mellifera</i> L.) (Hymenoptera: Apidae) in the field. AC study no. 954-96-269, 1998
IIIA 10.4.4	Heller, G	1998	Supplement to the "Comprehensive Evaluation" on E/4 - No 5 of March 11, 1997. Here: Additional GLP field studies with FASTAC in the dose rate for application in maize (175 ml/ha). Doc No 30505-481-009, September 17, 1998.
IIIA 10.4.4	Muhlen, W	1998	Assessment of the side effects of alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) on honeybees ( <i>Apis mellifera</i> L.) under natural conditions in the field. AC study no. 954-97-191, 1998.
IIIA 10.4.4	Nengel, S	1998	Alphacypermethrin (CL 900049) 100 gai/l SC (CF06677). The effects on the honey bee ( <i>Apis mellifera</i> L.) in the field following application during bee flight (application rate: single maximum field application rate) AC study no. 954-97-192, 1998.
IIIA 10.4.4	Schmitzer, S	1998	Toxicity testing of alphacypermethrin (CL 900049) 100 gai/l SC (CF06677) to Honey Bees ( <i>Apis mellifera</i> L.) (Hymenoptera: Apidae) in the field. AC study no. 954-97-193, 1998
IIIA 10.4.4	Muhlen, W	1998	Assessment of the side effects of alphacypermethrin (CL 900049) 150 gai/kg WG (RLF12152) on honeybees ( <i>Apis mellifera</i> L.) under natural conditions in the field. AC study no. 954-96-217, 1998.
IIIA 10.4.4	Nengel, S	1998	Alphacypermethrin (CL 900049) 150 gai/kg WG (RLF12152). The effects on the honey bee ( <i>Apis mellifera</i> L.) in the field following application during bee flight (application rate: single maximum field application rate) AC study no. 954-96-216, 1998.
IIIA 10.4.4	Schmitzer, S	1998	Toxicity testing of alphacypermethrin (CL 900049) 150 gai/kg WG (RLF12152) to Honey Bees ( <i>Apis mellifera</i> L.) (Hymenoptera: Apidae) in the field. AC study no. 954-96-218, 1998
IIIA 10.6.2	Poyntz, B	2002	Alphacypermethrin : Assessment of the risk to soil-dwelling macro-invertebrates April 2002
IIIA 10.6.2	Pease, G. & Forster A.	2002	A Field Evaluation on the Effects of Alphacypermethrin (BAS 310 03 I), in a 100 g/L OESC Formulation (CF 06677) on the Degradation of Buried Straw in Litter Bags. ER-02-KCB155, 19 March 2002

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IIIA 10.8	Ortlip, C	2001	Effect of alphacypermethrin 100 g/l OESC formulation at 30 and 90 g a.i./ha on vegetative vigor of six terrestrial plant species AC 12704:008, 18 January 2001

## APPENDIX IV

## List of uses supported by available data

## ALPHA-CYPERMETHRIN

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 min max		
Wheat  (spring & winter)	EU	FASTAC	F	Aphids	EC	100	Overall spray	Infestati on	1		0.0025 – 0.0075	200 – 400	0.010 – 0.015	42	
Cabbage	EU	FASTAC	F	Aphids, Lepidopter a, Coleopter a	EC	100	Overall spray	Infestati on	1		0.0025 – 0.0075	200 – 400	0.010 – 0.015	7	
Oilseed rape	EU	FASTAC	F	Coleopter a, Diptera, Aphids	EC	100	Overall spray	Infestati on	1		0.0025 – 0.0050	200 – 400	0.010	49	

- 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

