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| --- |
| REGISTRATION REPORT  **Part B**  Section 6  Mammalian Toxicology  Detailed summary of the risk assessment |
| Product code: BAS 743 03 F  Product name: **DIVEXO**  Chemical active substances:  Ametoctradin 120 g/L  Propamocarb hydrochloride 451 g/L |
| Central Zone  Zonal Rapporteur Member State: Poland |
| CORE ASSESSMENT  (authorization of product) |
| Applicant: XXXX  Submission date: October 2023 (update September 2024)  Evaluation date: May 2024  MS Finalisation date: November 2024 |

Version history

|  |  |
| --- | --- |
| When | What |
| October 2023 | Initial dRR – XXXX Doc ID 2023/2029345 |
| May 2024 | zRMS-PL evaluation |
| September 2024 | Update following the Commenting Phase (XXXX Doc ID 2024/2031509):   * Appendix 1 – List of data tables * A 2.11.1 – Inclusion of two *in-vitro* MNT studies on M650F03 and M650F04. |
| November 2024 | Updated dRR – after MSs consultation |

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# Mammalian Toxicology (KCP 7)

## Summary

Table 6.1‑1: Information on BAS 743 03 F \*

|  |  |
| --- | --- |
| Product name and code | BAS 743 03 F |
| Formulation type | Suspension concentrate (SC) |
| Active substance(s) (incl. content) | Ametoctradin 120.0 g/L (min. purity 98%, 122.4 g/L technical content)  Propamocarb-hydrochloride 451.0 g/L (min. purity ~~96%~~ 92%w/w (TC)\*\*\*, ~~469.8~~ 490.22g/L technical content, water free material) equivalent to 378 g/L propamocarb\*\* |
| Function | Fungicide |
| Product already evaluated as the ‘representative formulation’ during the approval of the active substance(s) | No |
| Product previously evaluated in another MS according to Uniform Principles | No |

\* Information on the detailed composition of BAS 743 03 F can be found in the confidential dRR Part C.

\*\* A conversion factor of Propamocarb-hydrochloride to Propamocarb 224.7:188.3 = 1.193

\*\*\* based on FAO specification 399.601/TK May 2013

Justified proposals for classification and labelling

According to the criteria given in Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008, the following classification and labelling with regard to toxicological data is proposed for the preparation:

Table 6.1‑2: Justified proposals for classification and labelling for BAS 743 03 F according to Regulation (EC) No 1272/2008

|  |  |
| --- | --- |
| Hazard class, categories: | Skin Sens. 1 |
| Hazard pictograms or Code for hazard pictogram: | GHS07  exclam |
| Signal word: | Warning |
| Hazard statements: | H317 May cause an allergic skin reaction |
| Precautionary statement(s): | P261, P272, P280  P302 + P352  P333 + P313  P362 + P364 |
| Additional labelling phrases: | To avoid risks to human health and the environment, comply with the instructions for use. [EUH401] |
|  | Contains Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) and 1,2-benzisothiazol-3-one. ~~May produce an allergic reaction. [EUH208]~~ |

Table 6.1‑3: Summary of risk assessment for operators, workers, bystanders and residents for BAS 743 03 F

|  | Result | PPE / Risk mitigation measures |
| --- | --- | --- |
| Operators | Acceptable | Gloves and coveralls during mixing/loading |
| Workers | Acceptable | ~~Ornamentals: gloves (i.e. cut/sort/bundle/carry/maintenance/thinning) for up to 3 5 days after application when harvesting handling treated crops~~  Potato: Workwear (arms, body and legs covered) and **gloves**, during reaching, picking  Tomato, aubergine, onion, garlic, ornamentals, fruit trees and shrubs: Workwear (arms, body and legs covered) during inspection and irrigation, reaching, picking, cutting, sorting, bundling and carrying. |
| Bystanders | Acceptable | None |
| Residents | Acceptable | None |

No unacceptable risk for operators, workers, bystanders and residents was identified when the product is used as intended and provided that the PPE/ risk mitigation measures stated in Table 6.1-3 are applied.

Based on operator exposure estimates, no specific PPE is necessary, however due to the classification of the product BAS 743 03 F as a skin sensitiser, the use of gloves and protective clothing (coverall) is required when operator handling the concentrate.

A summary of the critical uses and the overall conclusion regarding exposure for operators, workers and bystanders/residents is presented in the following table.

Table 6.1‑4 Critical uses and overall conclusion of exposure assessment

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Use-No.\* | Crops and situation (e.g. growth stage of crop) | F, Fn, Fpn G, Gn, Gpn or I \*\* | Application | | Application rate | | PHI (d) | Remarks:   (e.g. safener/synergist (L/ha)) | Acceptability of exposure assessment | | | |
| Method / Kind  (incl. application technique \*\*\* | Max. number (min. interval between applications) | Max. application rate  L product/ha | Water L/ha  min / max | Operator | Worker | Bystander | Residents |
| 1 | Potato (including seed potatoes) | F | LCTM | 3 (5 days) | 2 | 100 – 1000 | 7 | Critical gap for operator, worker, bystander or resident exposure based on Operators, workers and residents [EFSA Journal 2022;20(1):7032] | A | R | A | A |
| 5 | Tomato, aubergine | F | LCTM  LCHH | 2 (7 days) | 2 | 150 – 500 | 1 | A | A | A | A |
| 6 | Floriculture crops | F | LCTM  LCHH | 2 (7 days) | 2 | 500 | - | A | A | A | A |
| 13 | Fruit trees and shrubs | F | HCTM  HCHH | 2 (7 days) | 2 | 500 | - | A | A | A | A |

\* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1

\*\* F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

\*\*\* e.g. LC: low crops, HC: high crop, TM: tractor-mounted, HH: hand-held

Explanation for column 10 “Acceptability of exposure assessment”

|  |  |
| --- | --- |
| A | Exposure acceptable without PPE / risk mitigation measures |
| R | Further refinement and/or risk mitigation measures required |
| N | Exposure not acceptable/ Evaluation not possible |

Data gaps

Noticed data gaps are: none

## Toxicological Information on Active Substances

Information regarding classification of the active substances and on EU endpoints and critical areas of concern identified during the EU review are given in Table 6.2‑1.

Table 6.2‑1: Information on active substances

|  | Ametoctradin | Propamocarb-HCl |
| --- | --- | --- |
| Common Name | Ametoctradin | Propamocarb-HCl |
| CAS-No. | 865318-97-4 | 25606-41-1 |
| Classification and proposed labelling | | |
| With regard to toxicological endpoints (according to the criteria in Reg. 1272/2008, as amended) | Ametoctradin has no harmonized classification and labelling.  Based on Conclusion on the peer review of the pesticide risk assessment of the active substance ametoctradin (EFSA Journal 2012;10(11):2921) no classification is proposed with regard to toxicological data. | Skin Sens. Cat. 1 (H317 May cause an allergic skin reaction), based on Conclusion on the peer review of propamocarb (EFSA Scientific Report (2006) 78, 1-8)  Propamocarb HCl has no harmonized classification and labelling according to Reg. 1272/2008. |
| Additional C&L proposal | None | None |
| Agreed EU endpoints | | |
| AOEL systemic | 2 mg/kg bw/d (corrected for ~~40%~~ 20% oral absorption) | 0.29 mg/kg bw/d |
| Reference | EFSA Conclusion (EFSA Journal 2012;10(11):2921)  SANCO/12977/2012 rev 2, 2013 | SANCO/10057/2006 final  EFSA Scientific Report (2006) 78, 1-8 |
| Conditions to take into account/critical areas of concern with regard to toxicology | | |
| EU Review Report for active substance | - the current assessment for ground water exposure assumes application to potatoes once every three years;  - the leakage of metabolite M650F04 (considered not toxicologically relevant) that may exceed 10 µg/L under vulnerable conditions  Conditions of use shall include risk mitigation measures where appropriate. | None |

## Toxicological Evaluation of Plant Protection Product

A summary of the toxicological evaluation for BAS 743 03 F is given in the following tables. Full summaries of studies on the product that have not been previously considered within an EU peer review process are described in detail in Appendix 2.

No acute oral, dermal, inhalation toxicity, skin irritation, eye irritation and skin sensitisation studies have been performed for BAS 743 03 F / DIVEXO. The toxicological evaluation is addressed using data on the active substance and co-formulants. Classification has been carried out by calculation.

Table 6.3‑1: Summary of evaluation of the studies on acute toxicity including irritancy and skin sensitisation for BAS 743 03 F

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of test, species, model system (Guideline) | Result | Classification based on calculation methodology or GCL/SCL  (acc. to the criteria in Reg. 1272/2008) | Acceptability | Reference |
| LD50 oral, rat | ~~>2000 mg/kg bw~~  No study conducted on BAS 743 03 F | None | the result of calculation method according to CLP Reg. is acceptable | Calculation method according to Regulation (EC) No 1272/2008.  Justification presented in Appendix 2 |
| LD50 dermal, rat | ~~(>) 2000 mg/kg bw~~  No study conducted on BAS 743 03 F | None | the result of calculation method according to CLP Reg. is acceptable | The product doesn’t contain any relevant ingredient classified as acute toxic by dermal route.  Justification presented in Appendix 2 |
| LC50 inhalation, rat | ~~>2.48 mg/L air (maximum possible dose)~~  No study conducted on BAS 743 03 F | None | the result of calculation method according to CLP Reg. is acceptable | The product doesn’t contain any relevant ingredient classified as acute toxic by inhalation route.  Justification presented in Appendix 2 |
| Skin irritation | ~~Non-irritant~~  No study conducted on BAS 743 03 F | None | the result of calculation method according to CLP Reg. is acceptable | Calculation method according to Regulation (EC) No 1272/2008.  Justification presented in Appendix 2 |
| Eye irritation | ~~Non-irritant~~  No study conducted on BAS 743 03 F | None | the result of calculation method according to CLP Reg. is acceptable | Calculation method according to Regulation (EC) No 1272/2008.  Justification presented in Appendix 2 |
| Skin sensitisation | ~~Skin sensitising~~  No study conducted on BAS 743 03 F | Skin Sens. 1, H317 | the result of calculation method according to CLP Reg. is acceptable | Calculation method according to Regulation (EC) No 1272/2008.  Justification presented in Appendix 2 |
| Supplementary studies for combinations of plant protection products | No data – not required | - | - | - |

Table 6.3‑2: Additional toxicological information relevant for classification/labelling of BAS 743 03 F

|  | Substance (Concentration in product, % w/w) | Classification of the  substance  (acc. to the criteria in Reg. 1272/2008) | Reference | Classification of product (acc. to the criteria in Reg. 1272/2008) |
| --- | --- | --- | --- | --- |
| Toxicological properties of active substance(s) (relevant for classification of product) | Propamocarb-HCl (42.15% (w/w)) | Skin Sens 1, H317 | MSDS\*\*/  EFSA Scientific Report (2006) 78, 1-8 | H317 May cause an allergic skin reaction |
| Toxicological properties of non-active substance(s) (relevant for classification of product) | Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one  and 2-methyl-2H-isothiazol-3-one (3:1) C(M)IT/CMIT (CAS No. 55965-84-9) 0.000014 – 0.0013% w/w | Acute Tox. 3, H301; Acute Tox. 2, H310; Acute Tox. 2,  H330  Skin Corr. 1C, H314  Eye Dam. 1, H318  Skins Sens 1A; H317  Specific concentration limits:  Eye Dam 1 H318: C ≥ 0.6%  Skin Corr. 1C H314: C ≥ 0.6%  Skin Irrit. 2; H315: 0.06 % ≤ C < 0.6 %  Skin Sens. 1A H317: C ≥ 0.0015% | MSDS\*\* | ~~EUH208~~ ‘Contains Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one  and 2-methyl-2H-isothiazol-3-one (3:1)’ ~~May product an allergic reaction~~.  Statement EUH208 is not required on the label for mixtures classified as Skin Sens. 1 (see comment – Appendix 2.7) |
| 1,2-benzisothiazol-3(2H)-one (BIT)  (CAS No. 2634-33-5)  0.00046 – 0.038% w/w | Acute Tox. 4 oral; H302  Skin Irrit. 2; H315  Skin Sens. 1; H317  Eye Dam. 1; H318  Specific concentration limit: Skin Sens. 1A H317: C ≥ ~~0.05%~~ 0.036% (ATP21) | MSDS\*\* | ~~EUH208~~ ‘Contains (1,2-benzisothiazol-3(2H)-one’ ~~May product an allergic reaction~~.  Statement EUH208 is not required on the label for mixtures classified as Skin Sens. 1 (see comment – Appendix 2.7) |
| Further toxicological information | No data – not required |  |  |  |

\*Please use concentration range or concentration limit (e.g. 1-10 % or > 1 %) as provided in MSDS.

\*\*Material safety data sheet by the applicant

## Toxicological Evaluation of Groundwater Metabolites

The following data on metabolites with the potential to reach the groundwater in concentrations above 0.1 µg/L and requiring relevance assessment were submitted. Note that the relevance assessment of the metabolites is reported in Part B.10; the submitted toxicological studies are summarized in this document.

Based on DE comment received during commenting period for this dossier: *ametoctradin is currently under re-assessment and according to the current RAR (April 2024) there are some deviations in some of the genotoxicity studies which justify a downgrade to supplementary (i.e. only 200 metaphases analysed instead of 300 in the chromosome aberration studies and no evidence of bone marrow exposure + only 2000 cells scored instead of 4000 in the in vivo MN study)*.

### M650F03

An overview of the results of the accepted toxicological studies for groundwater metabolite M650F03 (Reg. No. 5178870) is given in the following table. Full summaries of studies on the metabolite that have not previously been considered within an EU peer review process are described in detail in Appendix 2 (A 2.11 Other/Special Studies).

Table 6.4‑1: Summary of the results of toxicity studies for M650F03

| Type of test, species (Guideline) | Result | Acceptability | Reference\*,  XXXX DocID |
| --- | --- | --- | --- |
| Ames test  (OECD 471) | non-genotoxic | agreed at EU level | XXXX, 2005b\*; (amendment 2006)\*  (2005/1027878 and 2006/1009297) |
| HPRT test  (OECD 476) | non-genotoxic | agreed at EU level | XXXX, 2006\* (amendment 2010)  (2006/1019549 and 2010/1066236) |
| in vitro CA  (OECD 473) | non-genotoxic | agreed at EU level | Schulz, M., Landsiedel, R., 2007a\*  (2006/1026067) |
| in vitro MNT  (OECD 487) | non-genotoxic | ~~agreed~~ under assessment at EU level  Accepted by zRMS (see A.2.11) | Naumann, 2019  (2019/2072726) |
| in vivo MNT  (OECD 474) | non-genotoxic | agreed at EU level | XXXX, 2006\*, (amendment 2006\* and 2010)  (2005/1026460 and 2006/1008225 and 2010/1066237) |
| 90-d oral study, rat  (OECD 408) | NOAEL: ≥ 943 mg/kg bw/day | agreed at EU level | XXXX. et al.., 2008a\*  (2008/1021526) |

\* indicates that a study was reviewed at EU level

### M650F04

An overview of the results of the accepted toxicological studies for groundwater metabolite M650F04 (Reg. No. 5211623) is given in the following table. Full summaries of studies on the metabolite that have not previously been considered within an EU peer review process are described in detail in Appendix 2 (A 2.11 Other/Special Studies).

Table 6.4‑2: Summary of the results of toxicity studies for M650F04

| Type of test, species (Guideline) | Result | Acceptability | Reference\*,  XXXX DocID |
| --- | --- | --- | --- |
| Ames test  (OECD 471) | non-genotoxic | agreed at EU level | Schulz, M., Landsiedel, R., 2007b\*  (2007/1003922) |
| HPRT test  (OECD 476) | non-genotoxic | agreed at EU level | Schulz, M., Hellwig, J., 2006\*  (2006/1038806) |
| in vitro CA  (OECD 473) | non-genotoxic | agreed at EU level | Schulz, M., Landsiedel, R., 2007d\*  (2007/1022835) |
| in vitro MNT  (OECD 487) | non-genotoxic | ~~agreed~~ under assessment at EU level  Accepted by zRMS (see A.2.11) | Naumann, 2019  (2019/2072738) |
| 90-d oral study, rat  (OECD 408) | NOAEL: 1034 mg/kg bw/day | agreed at EU level | XXXX et al.., 2008b\*  (2008/1021527) |

\* indicates that a study was reviewed at EU level

## Dermal Absorption (KCP 7.3)

Summary of the dermal absorption rates for the active substances in BAS 743 03 F are presented in the following table.

Table 6.5‑1: Dermal absorption rates for active substances in BAS 743 03 F

|  | Ametoctradin | | Propamocarb-HCl | | |
| --- | --- | --- | --- | --- | --- |
|  | Value | Reference | Value | | Reference |
| Concentrate | 10% | Default value  EFSA Journal 2017;15(6):4873 | ~~7.0%~~  0.28% | | New study reported in Appendix 2 |
| Dilution | 50% | Default value  EFSA Journal 2017;15(6):4873 | Dilution 1 (1.8 g/L, dilution factor 1:251) | 1.2% | New study reported in Appendix 2 |
| Dilution 2 (0.6 g/L, dilution factor 1:752) | 28% |

### Justification for proposed values - Ametoctradin

No data on dermal absorption for ametoctradin in BAS 743 03 F is available. Justifications for default values according to Guidance on Dermal Absorption (EFSA Journal 2017;15(6):4873) are presented in the following table.

Table 6.5‑2: Default dermal absorption rates for ametoctradin

|  | Value | Justification for value | Acceptability of justification |
| --- | --- | --- | --- |
| Concentrate | 10% | Default value for an SC formulation | Accepted |
| Dilution | 50% | Accepted |

### Justification for proposed values – Propamocarb-hydrochloride

Proposed dermal absorption rates for propamocarb-HCl are based on dermal absorption study performed on BAS 743 03 F. The study results are summarized in the following table. Full summaries of studies on the dermal absorption of propamocarb-HCl that have not previously been evaluated within an EU peer review process are described in detail in Appendix 2.

Table 6.5‑3: Summary of the results of submitted dermal absorption studies for propamocarb-HCl

| Test | Concentrate | Spray dilution  (Dilution factor) | Formulation in study | Acceptability of study | Justification provided on representativity of study formulation for current product | Acceptability of justification | Reference |
| --- | --- | --- | --- | --- | --- | --- | --- |
| In vitro (human) | ~~7.0%~~  0.28% | n.a. | BAS 743 03 F | Yes | Yes (see Appendix A 2.10 and Part C) | Justification accepted. Endpoint can be used for current product. | (~~2022~~ XXXX., 2023)  Study number 10B0169/22B056  DocID 2022/2034970 |
| 1.2% | (1:251; 1.8 g a.s/L) | BAS 743 03 F |
| 28% | (1:752; 0.6 g a.s/L) | BAS 743 03 F |

## Exposure Assessment of Plant Protection Product (KCP 7.2)

Table 6.6‑1: Product information and toxicological reference values used for exposure assessment

|  |  |  |
| --- | --- | --- |
| Product name and code | BAS 743 03 F | |
| Formulation type | SC | |
| Category | Fungicide | |
| Active substances (incl. content) | **Ametoctradin**  120 g/L (min. purity 98%, 122.4 g/L technical content) | **Propamocarb HCl**  451 g/L (min. purity ~~96%~~ 92% TC, ~~469.8 g/L~~ 490.22g/L technical content water free material) |
| AOEL systemic | 2 mg/kg bw/d | 0.29 mg/kg bw/d |
| Inhalation absorption | 100 % | 100 % |
| Oral absorption | 100 %  ~~20% acc. to EFSA Journal 2012;10(11):2921~~ | 100 % |
| Dermal absorption | Concentrate: 10 %  Dilution: 50 %  (Default value for SC formulation) | Concentrate: ~~7.0%~~ 0.28%  Dilution: 1.2 % (1.8 g/L, Dilution factor 1:251), 28% (0.6 g/L, dilution factor 1:752)  (Based on product formulation) |

### Selection of critical uses and justification

The critical GAPs used for the exposure assessment of the plant protection product are shown in Table 6.1‑4. A list of all intended uses within the Central Zone is given in Part B, Section 0.

Justification

Please note, the EFSA 2022 calculator requires exposure input value of the active substance technical content for modelling.

Operators

The worst case for the operator is given for the highest application rate (maximum individual dose) for each proposed application method.

* The outdoor application of BAS 743 03 F to potato is presented as the worst case for downward, vehicle mounted spray application to low crops. The highest application rate is 2 L product/ha and using a dermal absorption of 28% for the dilution of propamocarb-HCl. This provides the risk envelope for application to all field crops.
* The outdoor application of BAS 743 03 F to tomato/aubergine is the worst-case scenario for downward hand-held spray applications. The highest application rate is 2 L product/ha and using a dermal absorption of 1.2% for the dilution of propamocarb-HCl.
* The outdoor application of BAS 743 03 F to avenue tree is the worst-case for upward spray tractor mounted and hand-held spray application to high crops. The highest application rate is 2 L product/ha and using a dermal absorption value of 1.2% for the dilution of propamocarb-HCl.

Workers

Worker exposure is defined by the task being undertaken and the amount of active substance that is available to be dislodged. The following exposure scenarios have been presented to cover inspection and harvesting re-entry activities:

* ~~Crop inspection~~ reaching/picking of potatoes represents the worst-case for re-entry activities in field crops. This provides the risk envelope for field crops. The highest application rate is 3 × 2 L product/ha at 5 days interval and using a dermal absorption of 28% for the dilution of propamocarb-HCl.
* Harvesting of tomato/aubergine represents the worst-case re-entry activities in vegetable crops. The highest application rate is 2 × 2 L product/ha at 7 days interval and using a dermal absorption of ~~7%~~ 1.2% as the worst-case for propamocarb-HCl.
* Cutting, sorting, bundling and carrying floriculture is the worst-case re-entry activities for low ornamentals (e.g. perennial crops). This provides the risk envelope for re-entry activities in high ornamentals (e.g. avenue trees, forest trees) where maintenance and thinning tasks may be performed. The highest application rate is 2 × 2 L product/ha at 7 days interval and using a dermal absorption of ~~7%~~ 1.2% as the worst-case for propamocarb-HCl.

Resident and bystander

The worst case for bystander and resident is given by the number of multiple applications and water volume. For downward spray application, potato (considering a minimum in-use water volume of 100 L/ha and a dermal absorption value of 28%) is presented as the worst case and covers all outdoor crops. The highest application rate 3 × 2 L product/ha at 5-day interval.

For upward spray application, high ornamentals (considering a minimum in-use water volume of 500 L/ha and a dermal absorption value of ~~7%~~ 1.2% for the concentrate and spray dilution of propamocarb-HCl) is the worst case. The highest application rate 2 × 2 L product/ha at 7-day interval

As levels of spray drift from hand-held sprayers are expected to be lower than from applications made using broadcast air-assisted sprayers and tractor mounted field crop (boom) sprayers, this application scenario is within the risk envelope of the risk assessment provided for vehicle mounted/trailed spray application.

### Operator exposure (KCP 7.2.1)

#### Estimation of operator exposure

A summary of the exposure models used for estimation of operator exposure to the active substances during application of BAS 743 03 F according to the critical uses presented in Table 6.6‑2. Outcome of the estimation is presented in Table 6.6‑3. Detailed calculations are in Appendix 3.

Table 6.6‑2: Exposure models for intended uses

|  |  |
| --- | --- |
| Critical uses | Potato (2 L product/ha)  High ornamentals (2 L product/ha) |
| Model | EFSA calculator OPEX version: 1.0.0 / zRMS recalculation: OPEX version: 1.0.2\*  Guidance on the assessment of exposure of operators, workers, residents and bystanders in risk assessment of plant protection products. EFSA Journal 2022;20(1):7032. Adopted: 30 November 2021  doi: 10.2903/j.efsa.2022.7032 |

\*The concentration of active substances in the product, expressed as technical material were used by the applicant, however the value 469.8 g/L for propamocarb HCl was used incorrectly (for incorrect min. purity 96%). Since min. purity of propamocarb HCl is 92% (technical content water free material acc. to FAO specification 399.601/TK May 2013) the concentration of TC propamocarb HCl of 490.22g/L was used for recalculation of exposure by zRMS.

Table 6.6‑3: Estimated operator exposure

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Ametoctradin | | Propamocarb-HCl | |
| Model data | Level of PPE | Total absorbed dose  (mg/kg/day) | % of systemic AOEL | Total absorbed dose  (mg/kg/day) | % of systemic AOEL |
| Tractor mounted boom spray application outdoors to potato/tomato/aubergine/onion/garlic/floriculture crops | | | | | |
| Application rate: | | 2 L product/ha | | | |
| **EFSA Calculator** (75th percentile)  Body weight: 60 kg | Workwear (arms, body and legs covered) ML and A | 0.08 | 4.2 | ~~0.1~~  ~~0.2~~  0.04 | ~~51.6~~  ~~53.2~~  13.9 |
| Hand-held (knapsack) spray application outdoors to tomato/aubergine/ onion/garlic /floriculture crops | | | | | |
| Application rate: | | 2 L product/ha | | | |
| **EFSA Calculator** (75th percentile)  Body weight: 60 kg | Workwear (arms, body and legs covered) ML and A | 0.1 | 5.2 | ~~0.01~~  0.05 | ~~4.9~~  17.3 |
| Hand-held (manual) spray application outdoors to tomato/aubergine/ onion/garlic /floriculture crops | | | | | |
| Application rate: | | 2 L product/ha | | | |
| **EFSA Calculator** (75th percentile)  Body weight: 60 kg | Workwear (arms, body and legs covered) ML and A | 0.1 | 5.1 | ~~0.03~~  0.1 | ~~10.3~~  44.7 |
| ~~Hand-held (knapsack) spray application outdoors to onion/garlic~~ | | | | | |
| ~~Application rate:~~ | | ~~2 L product/ha~~ | | | |
| **~~EFSA Calculator~~** ~~(75~~~~th~~ ~~percentile)~~  ~~Body weight: 60 kg~~ | ~~Workwear (arms, body and legs covered) ML and A~~ | ~~0.1~~ | ~~5.2~~ | ~~0.06~~ | ~~21~~ |
| ~~Hand-held (manual) spray application outdoors to onion/garlic~~ | | | | | |
| ~~Application rate:~~ | | ~~2 L product/ha~~ | | | |
| **~~EFSA Calculator~~** ~~(75~~~~th~~ ~~percentile)~~  ~~Body weight: 60 kg~~ | ~~Workwear (arms, body and legs covered) ML and A~~ | ~~0.1~~ | ~~5.1~~ | ~~0.2~~ | ~~52.4~~ |
| Tractor mounted spray application outdoors to high/low ornamentals | | | | | |
| Application rate: | | 2 L product/ha | | | |
| **EFSA**  **Calculator** (75th percentile)  Body weight: 60 kg | Workwear (arms, body and legs covered) ML and A | 0.1 | 4.9 | ~~0.05~~  0.01 | ~~17.5~~  ~~18~~  4.2 |
| Hand-held (knapsack) spray application outdoors to high/low ornamentals | | | | | |
| Application rate: | | 2 L product/ha | | | |
| **EFSA Calculator** (75th percentile)  Body weight: 60 kg | Workwear (arms, body and legs covered) ML and A | 0.03 | 1.7 | ~~0.01~~  0.003 | ~~4.7~~  ~~4.8~~  1.1 |
| Hand-held (manual) spray application outdoors to high/low ornamentals | | | | | |
| **EFSA Calculator** (75th percentile)  Body weight: 60 kg | Workwear (arms, body and legs covered) ML and A | 0.05 | 2.3 | ~~0.03~~  0.007 | ~~9.9~~  ~~10.1~~  2.5 |

### Measurement of operator exposure

Since the operator exposure estimations carried out indicated that the acceptable operator exposure level (AOEL) will not be exceeded under conditions of intended uses and considering above mentioned personal protective equipment (PPE), a study to provide measurements of operator exposure was not necessary and was therefore not performed.

### Worker exposure (KCP 7.2.3)

#### Estimation of worker exposure

Table 6.6‑4 shows the exposure model used for estimation of worker exposure after entry into a previously treated area or handling a crop treated with BAS 743 03 F according to the critical uses. Outcome of the estimation is presented in \*The concentration of active substances in the product, expressed as technical material were used by the applicant, however the value 469.8 g/L for propamocarb HCl was used incorrectly (for incorrect min. purity 96%). Since min. purity of propamocarb HCl is 92% (technical content water free material acc. to FAO specification 399.601/TK May 2013) the concentration of TC propamocarb HCl of 490.22g/L was used for recalculation of exposure by zRMS.

Table 6.6‑5. Detailed calculations are in Appendix 3.

Table 6.6‑4: Exposure models for intended uses

| Critical uses | Potato (3 × 2 L product/ha)  Tomato/aubergine/onion/garlic (2 × 2 L product/ha)  Low ornamentals (2 × 2 L product/ha) |
| --- | --- |
| Model | EFSA calculator OPEX version: 1.0.0 / zRMS recalculation: OPEX version: 1.0.2\*  Guidance on the assessment of exposure of operators, workers, residents and bystanders in risk assessment of plant protection products. EFSA Journal 2022;20(1):7032. Adopted: 30 November 2021  doi: 10.2903/j.efsa.2022.7032 |

\*The concentration of active substances in the product, expressed as technical material were used by the applicant, however the value 469.8 g/L for propamocarb HCl was used incorrectly (for incorrect min. purity 96%). Since min. purity of propamocarb HCl is 92% (technical content water free material acc. to FAO specification 399.601/TK May 2013) the concentration of TC propamocarb HCl of 490.22g/L was used for recalculation of exposure by zRMS.

Table 6.6‑5: Estimated worker exposure

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Ametoctradin | | Propamocarb-HCl | |
| Model data | Level of PPE | Total absorbed dose (mg/kg/day) | % of systemic AOEL | Total absorbed dose (mg/kg/day) | % of systemic AOEL |
| Number of applications and application rate: | | 3 × 2 L product/ha (potato) | | | |
| Task: Reaching, picking  Work rate: 8 hours/day  Body weight: 60 kg  DT50: 30 days  DFR: 3 µg/cm2/kg a.s./ha  Application interval: 5 days  Dermal absorption:  Ametoctradin 50%  Propamocarb-HCl 28% | Workwear (arms, body and legs covered)  TC: 2500 cm2/person/h | 0.3 | 16.4 | **0.7** | **254** |
| Workwear (arms, body and legs covered) and gloves  TC: 580 cm2/person/h | 0.08 | 3.8 | 0.2 | 58.9 |
| Task: Inspection and irrigation  Work rate: 2 hours/day  Body weight: 60 kg  DT50: 30 days  DFR: 3 µg/cm2/kg a.s./ha  Application interval: 5 days  Dermal absorption:  Ametoctradin 50%  Propamocarb-HCl 28% | Workwear (arms, body and legs covered)  TC: 1400 cm2/person/h | 0.05 | 2.3 | 0.1 | ~~34~~  35.5 |
| Number of applications and application rate: | | 2 × 2 L product/ha (tomato and aubergine) | | | |
| Task: reach and pick  Work rate: 8 hours/day  Body weight: 60 kg  DT50: 30 days  DFR: 3 µg/cm2/kg a.s./ha  Application interval: 7 days  Dermal absorption: Ametoctradin 50%  Propamocarb-HCl ~~7.0%~~ 1.2% | Workwear (arms, body and legs covered)  TC: 2500 cm2/person/h | 0.2 | 11.3 | ~~0.1~~  0.02 | ~~42~~  ~~43.8~~  7.5 |
| Number of applications and application rate: | | 2 × 2 L product/ha (high /low ornamentals) | | | |
| Task: cutting, sorting, bundling and carrying  Work rate: 8 hours/day  Body weight: 60 kg  DT50: 30 days  DFR: 3 µg/cm2/kg a.s./ha  Application interval: 7 days  Dermal absorption: Ametoctradin 50%  Propamocarb-HCl ~~7.0%~~ 1.2% | Workwear (arms, body and legs covered)  TC: 5000 cm2/person/h | 0.5 | **22.6** | ~~0.2~~  ~~0.3~~  0.04 | ~~83.9~~  **~~87.6~~**  15 |
| Workwear (arms, body and legs covered) and gloves  TC: 1400 cm2/person/h | 0.1 | 6.3 | ~~0.07~~  0.01 | ~~23.5~~  ~~24.5~~  4.2 |
| ~~Workwear (arms, body and legs covered) and 3 5 days with gloves~~  ~~TC: 5000 cm~~~~2~~~~/person/h~~ | ~~0.42~~ | ~~21.1~~ | ~~0.23~~ | ~~78.3~~ |

#### Refinement of generic DFR value (KCP 7.2)

#### Measurement of worker exposure

Since the worker exposure estimations carried out indicated that the acceptable operator exposure level (AOEL) will not be exceeded under conditions of intended uses and considering above mention PPE, a study to provide measurements of worker exposure was not necessary and was therefore not performed.

### Bystander and resident exposure (KCP 7.2.2)

#### Estimation of bystander and resident exposure

The acute exposure assessment for bystanders covers the exposure that a resident could reasonably be expected to incur in a single day. Therefore, there is no need for a separate acute risk assessment for residents.

No bystander risk assessment is required for PPPs that do not have significant acute toxicity or the potential to exert toxic effects after a single exposure. Exposure in this case will be determined by average exposure over a longer duration, and higher exposures on one day will tend to be offset by lower exposures on other days. Therefore, exposure assessment for residents also covers bystander exposure.

At this time, no acute AOEL has been set for ametoctradin or propamocarb-HCl. Consequently, no acute risk assessment has been provided for these active substances.

Table 6.6‑6 shows the exposure model used for estimation of bystander and resident exposure to ametoctradin and propamocarb-HCl. Outcome of the estimation is presented in \*The concentration of active substances in the product, expressed as technical material were used by the applicant, however the value 469.8 g/L for propamocarb HCl was used incorrectly (for incorrect min. purity 96%). Since min. purity of propamocarb HCl is 92% (technical content water free material acc. to FAO specification 399.601/TK May 2013) the concentration of TC propamocarb HCl of 490.22g/L was used for recalculation of exposure by zRMS.

Table 6.6‑7. Detailed calculations are in Appendix 3.

Table 6.6‑6: Exposure models for intended uses

|  |  |
| --- | --- |
| Critical use | Potato (3 × 2 L product/ha)  High ornamentals (2 × 2 L product/ha) |
| Model | EFSA calculator OPEX version: 1.0.0/ zRMS recalculation: OPEX version: 1.0.2\*  Guidance on the assessment of exposure of operators, workers, residents and bystanders in risk assessment of plant protection products. EFSA Journal 2022;20(1):7032. Adopted: 30 November 2021  doi: 10.2903/j.efsa.2022.7032 |

\*The concentration of active substances in the product, expressed as technical material were used by the applicant, however the value 469.8 g/L for propamocarb HCl was used incorrectly (for incorrect min. purity 96%). Since min. purity of propamocarb HCl is 92% (technical content water free material acc. to FAO specification 399.601/TK May 2013) the concentration of TC propamocarb HCl of 490.22g/L was used for recalculation of exposure by zRMS.

Table 6.6‑7: Estimated bystander and resident exposure

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | Ametoctradin | | Propamocarb-HCl | |
| Model data | | Total absorbed dose (mg/kg/day) | % of systemic AOEL | Total absorbed dose (mg/kg/day) | % of systemic AOEL |
| Tractor mounted spray application outdoors to low crops  Minimum volume water for application: 100 L/ha  Buffer zone: 2-3 m  Drift reduction technology: not applicable  DT50: 30 days  DFR: 3 µg/cm2/kg a.s./ha  Interval between application: 5 days | | | | | |
| Number of applications and application rate: | | 3 × 2 L product/ha | | | |
| Vapour pressure | | 2.1 x 10-10 Pa at 20 °C  275.4 g/mol | | 1.66 x 10-3 Pa at 25 ºC  224.7 g/mol | |
| Dermal absorption | | ~~10% for the concentrate and~~ 50% for the dilution | | ~~7.0% for the concentrate~~ 28% for the dilution | |
| Resident child  Body weight: 10 kg | Drift (75th perc.) | 0.03 | 1.7 | 0.07 | ~~24.6~~  25.7 |
| Vapour (75th perc.) | 2e-08 | 9E-07 | 0.0008 | 0.3 |
| Deposits (75th perc.) | 0.005 | 0.3 | 0.01 | ~~4.2~~  4.4 |
| Re-entry (75th perc.) | 0.06 | 2.8 | 0.1 | ~~41~~  42.8 |
| **Sum (mean)** | 0.07 | 3.3 | 0.1 | ~~49.5~~  51.7 |
| Resident adult  Body weight: 60 kg | Drift (75th perc.) | 0.008 | 0.4 | 0.02 | ~~5.8~~  6.1 |
| Vapour (75th perc.) | 6e-09 | 3E-07 | 0.0003 | 0.09 |
| Deposits (75th perc.) | 0.002 | 0.1 | 0.005 | 1.7 |
| Re-entry (75th perc.) | 0.03 | 1.5 | 0.07 | ~~22.8~~  23.8 |
| **Sum (mean**) | 0.03 | 1.5 | 0.06 | ~~22.2~~  23.2 |
| Tractor mounted spray application outdoors to high ornamentals  Minimum volume water for application: 500 L/ha  Buffer zone: 5 m  Drift reduction technology: not applicable  DT50: 30 days  DFR: 3 µg/cm2/kg a.s./ha  Interval between application: 7 days | | | | | |
| Number of applications and application rate: | | 2 × 2 L product/ha | | | |
| Dermal absorption | | ~~10% for the concentrate and~~ 50% for the dilution | | ~~7.0% for the concentrate 7%~~ 1.2% for the dilution | |
| Resident child  Body weight: 10 kg | Drift (75th perc.) | 0.03 | 1.7 | ~~0.02~~  0.003 | ~~6.3~~  1.2 |
| Vapour (75th perc.) | 2E-08 | 9E-07 | 0.0008 | 0.3 |
| Deposits (75th perc.) | 0.002 | 0.1 | ~~0.002~~  0.001 | ~~0.6~~  0.3 |
| Re-entry (75th perc.) | 0.04 | 1.9 | ~~0.02~~  0.004 | ~~7.1~~  ~~7.4~~  1.3 |
| **Sum (mean)** | 0.05 | 2.7 | ~~0.03~~  0.02  0.007 | ~~10.6~~  7.4  2.3 |
| Resident adult  Body weight: 60 kg | Drift (75th perc.) | 0.02 | 0.9 | ~~0.01~~  0.002 | ~~3.5~~  0.6 |
| Vapour (75th perc.) | 6E-09 | 3E-07 | 0.0003 | 0.09 |
| Deposits (75th perc.) | 0.0008 | 0.04 | ~~0.0005~~  0.00008 | ~~0.2~~  0.03 |
| Re-entry (75th perc.) | 0.02 | 1.1 | ~~0.01~~  0.002 | ~~3.9~~  ~~4.1~~  0.7 |
| **Sum (mean**) | 0.03 | 1.5 | ~~0.02~~  ~~0.01~~  0.003 | ~~5.6~~  ~~3.9~~  1.1 |

#### Measurement of bystander and/or resident exposure

Since the bystander and/or resident exposure estimations carried out indicated that the acceptable operator exposure level (AOEL) for ametoctradin and propamocarb-HCl will not be exceeded under conditions of intended uses and considering above mentioned risk mitigation measures, a study to provide measurements of bystander/resident exposure was not necessary and was therefore not performed.

### Combined exposure

The product is a mixture of two active substances.

#### Exposure Assessment of ametoctradin and propamocarb-HCl in BAS 743 03 F

Note: The combined toxicological effect of these active substances has not been investigated with regard to repeated dose toxicity.

At the first tier, combined exposure is calculated as the sum of the component exposures without regard to the mode of action or mechanism/target of toxicity. Initially, the individual Hazard Quotients (HQ) are calculated for all active substances in the PPP by assessing the exposure according to appropriate models and dividing the individual exposure levels by the respective systemic AOEL. This is equivalent to the predicted exposure as % of systemic AOEL from Table 6.6‑3 converted to decimal. The Hazard Index (HI) is the sum of the individual HQs.

Table 6.6‑8: Acute risk assessment from combined exposure

| Application scenario | Active Ingredient | Estimated exposure / AOEL (HQ) |
| --- | --- | --- |
| Operators (LCTM) | Ametoctradin | 0.042 |
| Propamocarb-HCl | ~~0.516~~  0.139 |
| **Cumulative risk Operators (HI)** | **~~0.6~~**  **0.2** |
| Workers – ~~hand-harvesting tomato/aubergine (workwear)~~  Reaching, picking – potato (workwear and gloves) | Ametoctradin | ~~0.113~~  0.038 |
| Propamocarb-HCl | ~~0.42~~  0.589 |
| **Cumulative risk Workers (HI)** | **~~0.533~~**  **0.6** |
| Workers – cut/sort/bundle/carry ornamentals (workwear ~~and up to 3 days with gloves~~) | Ametoctradin | ~~0.211~~  0.226 |
| Propamocarb-HCl | ~~0.783~~  0.15 |
| **Cumulative risk Workers (HI)** | **~~1~~**  **0.4** |
| Resident – Adult (sum of all pathways), LCTM | Ametoctradin | 0.015 |
| Propamocarb-HCl | ~~0.222~~  0.232 |
| **Cumulative risk Resident – Adult (HI)** | **0.2** |
| Resident – Child (sum of all pathways), LCTM | Ametoctradin | 0.033 |
| Propamocarb-HCl | ~~0.495~~  0.517 |
| **Cumulative risk Resident – Child (HI)** | **0.5** |

The Hazard Index is < 1. Thus combined exposure to all active substances in BAS 743 03 F is not expected to present a risk for operators, workers, bystanders and residents. No further refinement of the assessment is required.

1. Lists of data considered in support of the evaluation

List of data submitted by the applicant and relied on

| **Data point** | **Author(s)** | **Year** | **Title Company Report No.  Source (where different from company) GLP or GEP status Published or not** | **Vertebrate study**  **Y/N** | **Owner** |
| --- | --- | --- | --- | --- | --- |
| KCP 7.3/1 | XXXX | 2023 | 14C-BAS 9068 F in BAS 743 02 F and BAS 743 03 F - Study of penetration through human skin in vitro  2022/2034970  XXXX  yes  Unpublished | No | XXXX |

List of data submitted or referred to by the applicant and relied on, currently under evaluation at EU peer review

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Data point** | **Author(s)** | **Year** | **Title Company Report No.  Source (where different from company) GLP or GEP status Published or not** | **Vertebrate study**  **Y/N** | **Owner** |
| KCP 7.1.7/1 | Naumann, S. | 2019 | Reg.No. 5178870 (Metabolite of BAS 650 F, Ametoctradin): Micronucleus Test in Human Lymphocytes In Vitro  2019/2072726  ICCR - Roßdorf GmbH, Rossdorf, Germany Fed.Rep.  yes  Unpublished | No | XXXX |
| KCP 7.1.7/2 | Naumann, S. | 2019 | Reg.No. 5211623 (Metabolite of BAS 650 F, Ametoctradin): Micronucleus Test in Human Lymphocytes In Vitro  2019/2072738  ICCR - Roßdorf GmbH, Rossdorf, Germany Fed.Rep.  yes  Unpublished | No | XXXX |

List of data submitted or referred to by the applicant and relied on, but already evaluated at EU peer review

~~None~~

| Data point | Author(s) | Year | Title Company Report No.  Source (where different from company) GLP or GEP status Published or not | Vertebrate study  Y/N | Owner |
| --- | --- | --- | --- | --- | --- |
| KCP 7/1 | XXXX | 2005 | Salmonella typhimurium/Escherichia coli reverse mutation assay (standard plate test and preincubation test) with Reg.No. 5 178 870 (metabolite of Reg.No. 4 993 353)  2005/1027878  XXXX  yes  Unpublished | No | XXXX |
| KCP 7/2 | XXXX | 2006 | Salmonella typhimurium/Escherichia coli reverse mutation assay (standard plate test and preincubation test) with Reg.No. 5 178 870 (metabolite of BAS 650 F)  2006/1009297  XXXX  yes  Unpublished | No | XXXX |
| KCP 7/3 | Engelhardt, G.,  Landsiedel, R. | 2006 | In vitro gene mutation test with Reg.No. 5178870 (metabolite of BAS 650 F) in CHO cells (HPRT locus assay)  2006/1019549  XXXX, Ludwigshafen/Rhein, Germany Fed.Rep.  yes  Unpublished | No | XXXX |
| KCP 7/4 | Landsiedel, R., Schulz, M. | 2007 | In vitro chromosome aberration assay with Reg.No. 5178870 (metabolite of BAS 650 F) in V79 cells  2006/1026067  XXXX, Ludwigshafen/Rhein, Germany Fed.Rep.  yes  Unpublished | No | XXXX |
| KCP 7/5 | XXXX | 2006 | Cytogenetic study in vivo with Reg.No. 517 8870 (metabolite of Reg.No. 499 3353) in the mouse micronucleus test - Single oral administration  2005/1026460  XXXX  yes  Unpublished | Yes | XXXX |
| KCP 7/6 | XXXX | 2006 | Cytogenetic study in vivo with Reg.No. 5 178 870 (metabolite of BAS 650 F) in the mouse micronucleus test - Single oral administration  2006/1008225  XXXX  yes  Unpublished | Yes | XXXX |
| KCP 7/7 | XXXX | 2008 | Reg.No. 5178870 (metabolite of BAS 650 F) - Repeated dose 90-day oral toxicity study in Wistar rats; Administration in the diet  2008/1021526  XXXXE  yes  Unpublished | Yes | XXXX |
| KCP 7/8 | Landsiedel, R., Schulz, M. | 2007 | Salmonella typhimurium/Escherichia coli reverse mutation assay (standard plate test and preincubation test) with Reg.No. 5211623 (metabolite of BAS 650 F)  2007/1003922  XXXX, Ludwigshafen/Rhein, Germany Fed.Rep.  yes  Unpublished | No | XXXX |
| KCP 7/9 | Hellwig, J.,  Schulz, M. | 2006 | In vitro gene mutation test in CHO cells (HPRT locus assay) with Reg.No. 5211623 (metabolite of BAS 650 F)  2006/1038806  XXXX Ludwigshafen/Rhein, Germany Fed.Rep.  yes  Unpublished | No | XXXX |
| KCP 7/10 | Landsiedel, R., Schulz, M. | 2007 | In vitro chromosome aberration assay in V79 cells with Reg.No. 5211623 (Metabolite of BAS 650 F)  2007/1022835  XXXX, Ludwigshafen/Rhein, Germany Fed.Rep.  yes  Unpublished | No | XXXX |
| KCP 7/11 | XXXX | 2008 | Reg.No. 5211623 (metabolite of BAS 650 F) - Repeated dose 90-day oral toxicity study in Wistar rats; administration in the diet  2008/1021527  XXXX  yes  Unpublished | Yes | XXXX |

The following tables are to be completed by MS

List of data submitted by the applicant and not relied on

| Data point | Author(s) | Year | Title Company Report No.  Source (where different from company) GLP or GEP status Published or not | Vertebrate study  Y/N | Owner |
| --- | --- | --- | --- | --- | --- |
| KCP XX | Author | YYYY | Title  Company Report N  Source  GLP/non GLP/GEP/non GEP  Published/Unpublished | Y/N | Owner |
|  |  |  |  |  |  |

List of data relied on not submitted by the applicant but necessary for evaluation

| Data point | Author(s) | Year | Title Company Report No.  Source (where different from company) GLP or GEP status Published or not | Vertebrate study  Y/N | Owner |
| --- | --- | --- | --- | --- | --- |
| KCP XX | Author | YYYY | Title  Company Report N  Source  GLP/non GLP/GEP/non GEP  Published/Unpublished | Y/N | Owner |
|  |  |  |  |  |  |

1. Detailed evaluation of the studies relied upon

Acute toxicity for BAS 743 03 F has been assessed using the calculation method described in Regulation (EC) No. 1272/2008. SDS on all co-formulants have been provided in Part C.

* 1. Statement on bridging possibilities

No bridging required.

* 1. Acute oral toxicity (KCP 7.1.1)

Acute oral toxicity has been estimated using the calculation method described in Regulation (EC) No. 1272/2008. SDS on all co-formulants have been provided in Part C and assessed for acute oral toxicity.

One co-formulant (mixture) is classified for acute oral toxicity, category 4.

Acute oral toxicity is calculated using the following formula:

where:

Ci = concentration of ingredient i (% w/w or % v/v)

i = the individual ingredient from 1 to n

n = the number of ingredients

ATEi = Acute Toxicity Estimate of ingredient i.

Details of the calculation is found in Part C.

Conclusion

Using the calculation method, the ATEmix is >2000 mg/kg bw. Thus, classification is not required according to Regulation (EC) No. 1272/2008. BAS 743 03 F is not classified for acute oral toxicity.

* 1. Acute percutaneous (dermal) toxicity (KCP 7.1.2)

Acute dermal toxicity has been estimated using the calculation method described in Regulation (EC) No. 1272/2008. SDS on all co-formulants have been provided in Part C and assessed for acute dermal toxicity.

No ingredients (at content >0.1%[[1]](#footnote-1) of formulation) are classified for acute dermal toxicity.

Conclusion

Using the calculation method, no classification is required according to Regulation (EC) No. 1272/2008.

* 1. Acute inhalation toxicity (KCP 7.1.3)

Acute inhalation toxicity has been estimated using the calculation method described in Regulation (EC) No. 1272/2008. SDS on all co-formulants have been provided in Part C and assessed for acute inhalation toxicity.

No ingredients (at content >0.1%[[2]](#footnote-2) of formulation) are classified for acute inhalation toxicity.

Conclusion

Using the calculation method, no classification is required according to Regulation (EC) No. 1272/2008.

* 1. Skin irritation (KCP 7.1.4)

Skin irritation has been estimated using the calculation method described in Regulation (EC) No. 1272/2008. SDS on all co-formulants have been provided in Part C and assessed for skin irritation.

Three co-formulants (mixtures) are classified for skin corrosion, category 1. The concentration of the sum of these ingredients is <5%.

One substance in the co-formulant has a specific concentration limit (SCL) for skin corrosion. The concentration of this substance is below the SCL.

Conclusion

Using the calculation method, BAS 743 03 F is not a skin irritant. Thus, no classification is required according to Regulation (EC) No. 1272/2008.

* 1. Eye irritation (KCP 7.1.5)

Eye irritation has been estimated using the calculation method described in Regulation (EC) No. 1272/2008. SDS on all co-formulants have been provided in Part C and assessed for eye irritation.

Three co-formulants (mixtures) are classified for eye damage, category 1.

Eye damage/irritation is calculated using the following formula:

Sum of ingredients classified as: Skin corrosion Sub-Category 1A, 1B, 1C or Skin corrosion Category 1 + Serious eye damage (Category 1) + Eye Damage (Category 1)

Eye damage/irritation = (0.09% w/w × 1.48%) + (0.09% w/w × 3%) + (0.19% w/w × 20%) + (0.19% w/w × 10%) + (0.93% w/w × 3%)

= 1.3E-03 + 2.7E-03 + 0.038 + 0.019 + 0.028

= 0.09%

One substance in the co-formulant (mixture) has a specific concentration limit (SCL) for eye damage. The concentration of this substance is below the SCL.

One substance in the co-formulant is classified for eye irritation category 2.

Eye irritation is calculated using the following formula:

10 × (Skin corrosion Sub-Category 1A, 1B, 1C or Skin corrosion Category 1 + Serious eye damage (Category 1)) + Eye irritation (Category 2) = 10 x 0.09%+(0.09%w/w x 3%)

= 0.9% + 0.0027%

= 0.903%

Conclusion

Using the calculation method, the sum of ingredients classified for eye irritation/damage is <3%. Thus, classification is not required for BAS 743 03 F according to Regulation (EC) No. 1272/2008.

One substance in the co-formulant is classified for eye irritation category 2, but its content in the product is well below 1%, therefore this ingredient is not relevant for classifying the product BAS 743 03 F for eye irritation according to Regulation (EC) No. 1272/2008.

* 1. Skin sensitisation (KCP 7.1.6)

Skin sensitisation has been estimated using the calculation method described in Regulation (EC) No. 1272/2008. SDS on all co-formulants have been provided in Part C and assessed for skin sensitisation.

Propamocarb-HCl and two co-formulant (mixture) are classified for skin sensitisation, category 1. The concentration of propamocarb-HCl is >1%. Therefore propamocarb-HCl triggers classification for skin sensitisation (H317).

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) (CAS 55965-84-9) is present at a maximum concentration of 0.001495% (see Part C). This is below the specific concentration limit (SCL) for skin sensitisation of 0.0015%, but above the elicitation concentration of 0.00015%. ~~Therefore, reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) (CAS 55965-84-9) triggers EUH208~~. The statement ‘Contains Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). ~~May produce an allergic reaction~~’ should appear on the label.

1,2-Benzisothiazol-3-one (CAS 2634-33-5) is present at a maximum concentration of 0.04% (see Part C). This is above ~~below~~ the specific concentration limit (SCL) for skin sensitisation of ~~0.05~~ 0.036% and ~~, but~~ above the elicitation concentration of ~~0.005~~ 0.0036%. Therefore, ~~1,2-benzisothiazol-3-one (CAS 2634-33-5) triggers EUH208~~. The statement ‘Contains 1,2-benzisothiazol-3-one. ~~May produce an allergic reaction~~’ should appear on the label.

Conclusion

Using the calculation method, BAS 743 03 F is skin sensitiser. Thus, classification is required according to Regulation (EC) No. 1272/2008. BAS 743 03 F is classified for Skin Sens. Cat. 1 (H317). In addition, EUH208 phrase is triggered by two other substances.

**zRMS comment**:

The classification as skin sensitiser category 1 is warranted for the product BAS 743 03 F due to the content (42.15%) of propamocacarb HCl (classified as Skin Sens. 1, according to EFSA Scientific Report (2006) 78, 1-8) and 0.04% (>SCL=0.036%) of 1,2-Benzisothiazol-3-one (CAS 2634-33-5).

The statement EUH208 is required on the label for mixtures not classified as sensitising but containing at least one substance classified as sensitising.

According to Regulation (EC) No. 1272/2008: ‘Mixtures classified as sensitising containing other substance(s) classified as sensitising (in addition to the one that leads to the classification of the mixture) and present in a concentration equal to or greater than that specified in Table 3.4.6 of Annex I shall bear the name(s) of that/those substance(s) on the label.’

* 1. Supplementary studies for combinations of plant protection products (KCP 7.1.7)

None.

* 1. Data on co-formulants (KCP 7.4)
     1. Material safety data sheet for each co- formulant

Information regarding material safety data sheets of the co-formulants can be found in the confidential dossier of this submission (Registration Report - Part C).

* + 1. Available toxicological data for each co-formulant

Available toxicological data for each co-formulant can be found in the confidential dossier of this submission (Registration Report - Part C).

* 1. Studies on dermal absorption (KCP 7.3)

|  |  |
| --- | --- |
| Reference | KCP 7.3/01 |
| Report | 14C-BAS 9068 F in BAS 743 02 F and BAS 743 03 F, XXXX, 2023, Test Facility Project Identification No.: 10B0169/22B056, Sponsor Project No. AP study ID 890208, XXXX DocID 2022/2034970 |
| Guidelines | OECD Guideline for Testing of Chemicals No. 428, adopted April 13, 2004 (“Skin Absorption: in vitro Method”)  OECD Guidance Document No. 28 for the conduct of skin absorption studies, March 2004 |
| Deviations | No |
| GLP | Yes |
| Acceptability | Yes |
| Duplication  (if vertebrate study) | No |

|  |  |
| --- | --- |
| Comments of zRMS: | Study is accepted. The dermal penetration of propamocarb HCl as formulated product BAS 743 03 F through human dermatomed skin was determined *in vitro*. The amount of applied dose penetrating within 24 hours was estimated using the criteria of the EFSA Guidance on Dermal Absorption (2017) to be ~~7.0%~~ 0.28%, 1.2% and 28% for the formulation concentrate, 1:251 (1.8g/L) and 1:752 (0.6g/L) spray dilutions, respectively. The dermal penetration estimates to be used for the operator worker, resident and bystander exposure assessment. |

An in-vitro dermal penetration study with 14C-BAS 9068 F (propamocarb-HCl) in human skin membranes has been carried out to investigate dermal penetration of propamocarb-HCl formulated in BAS 743 02 F and BAS 743 03 F. A comparison of both formulations (BAS 743 02 F and BAS 743 03 F) has been made using the criteria in accordance with EFSA Journal 2017;15(6):4873 in Part C.

**Materials and methods**

**Radiolabelled formulation**

|  |  |
| --- | --- |
| **Active substance** | 14C-BAS 9068 F (Batch No. SPSA810-3-2) |
| Radiochemical purity: >98 % |
| **Radiolabelled test material 1  - Concentrate (Lot/Batch No.)** | 14C-BAS 743 02 F (Batch No. FD-221020-1011) |
| Propamocarb HCl: Radiochemical purity >95%, Specific activity 7.17 MBq/g |
| Propamocarb HCl (Nominal concentration 515.03 g/L) |
| **Radiolabelled test material 2  - Concentrate (Lot/Batch No.)** | 14C-BAS 743 03 F (Batch No. FD-221020-1012) |
| Propamocarb HCl: Radiochemical purity >95%, Specific activity 6.95 MBq/g |
| Propamocarb HCl (Nominal concentration 450.99 g/L) |
| **Radiolabelled test material 3  - Spray dilution 1 (1:251) (Lot/Batch No.)** | 14C-BAS 743 03 F (Batch No. FD-220922-1005) |
| Propamocarb HCl: Radiochemical purity >95%, Specific activity 4.16 MBq/g |
| Propamocarb HCl (Nominal concentration 1.8964 g/L) |

**Tested doses**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Concentrate 1  BAS 743 02 F | Concentrate 2  BAS 743 03 F | Dilution 1  BAS 743 03 F | Dilution 2  BAS 743 03 F |
| Target concentration [mg/mL] | 515 | 451 | 1.8 | 0.6 |
| Surface area dose [µg/cm2] | 5150 | 4510 | 18 | 6 |
| Total dose [µg/cell] | 5088 | 4346 | 18.5 | 6.3 |
| Specific activity [MBq/mL] | 7.74 | 7.44 | 4.16 | 1.39 |
| No. of donors | 8 | 8 | 8 | 8 |
| No. of replicates used/valid replicates | 8 | 8 | 8 | 8 |

**Test system**

|  |  |  |
| --- | --- | --- |
| Diffusion cell | Type of diffusion cell | Flow-through |
| Flow rate | 2.3 mL/h |
| Exposed skin area | 1 cm2 |
| Cover | Semi-occluded |
| Skin sample | Skin type | Dermatomed |
| Skin thickness range | 200-400 µm |
| Skin donor age | <65 yrs |
| Skin donor sex | Unknown |
| Site | Abdomen |
| Source | Surgery |
| Integrity test | Yes, electrical resistance |
| Receptor | Receptor medium | Physiological saline solution with 0.01 % (w/v) NaN3 |
| Solubility in receptor medium | Tested |
| Sampling | Exposure time | 8 h |
| Sampling duration | 24 h |
| Sample intervals | Every hour between 0-8, every 2 hours between 10-18, every 4 hours between 18-24 |
| Tape strips | Skin wash/Swabbing | Yes |
| Tape stripping | Yes |
| Type of tape strips used | 1-20 |
| TS 1-2 analysed separately? | Yes |

Remarks

Cell 15 shows a higher absorbed dose compared to the other cells of this dose group (BAS 743 03 F concentrate) and compared to BAS 743 02 F concentrate. This increase is based on higher amounts of measured radioactivity in the kinetic samples. Since the skin was intact (> 10 kOhm), the kinetic curve is not aberrant and an insufficient skin wash is excluded (penetration happened before), this cell is assessed to be valid.

An unexpected concentration-effect relationship was observed within this study: The absolute absorbed values of dilution 2 – which is a 3-fold dilution of the spray dilution of dilution 1 – were higher than the absolute absorbed values of dilution 1. This leads to an increase of the mean absorption from about 1 % of dose (for dilution 1) to about 20 % of dose (for dilution 2). Since the radiolabelled test substance is present in its form as hydrochloride, it is hypothesized that this shift may be related to a pH shift by the dilution of spray dilution of dose group 3. Such a pH shift to higher pH values may lead to higher amounts of BAS 9068 F (Propamocarb) present in its deprotonated, neutral form (and neutral molecules are known to have higher diffusion rates over biological barriers). To follow this hypothesis, the pH values of the test substance preparations (retain samples) were measured, resulting in pH values of 4.4-4.5 and 6.1-6.3 for spray dilution 1 and spray dilution 2, respectively. These results are consistent to the before mentioned hypothesis and may explain observed results.

**Results and discussions**

**Table A 1: In-vitro dermal penetration of propamocarb HCl formulated as BAS 743 02 F through human skin - Recovery data**

|  |  |  |
| --- | --- | --- |
| **Dose group** | **Concentrate** | |
| BAS 743 02 F | |
| Target concentration [mg/mL] | 515 | |
| Target dose [µg/cm2] | 5150 | |
| Mean actual applied dose [µg/cm2] | 5088 | |
| Recovery [%] | **Mean** | **SD** |
| **Dislodgeable dose** | | |
| Skin wash after 8 hours | 92.94 | 0.94 |
| Donor chamber wash | 0.13 | 0.01 |
| **Skin associated dose** | | |
| Tape strips 1-2 | 0.00 | 0.00 |
| Tape strips 3-20 | 0.00 | 0.00 |
| Skin preparation | 0.00 | 0.00 |
| **Absorbed dose** | | |
| Receptor fluid | 0.04 | 0.02 |
| Receptor chamber wash | 0.00 | 0.00 |
| **Total recovery1** | **93.12** | **0.92** |
| LLC of t\_0.5 absorption | 87.83 | 5.55 |
| Absorption complete? | Yes | |
| Measured absorption, if LLC of t\_0.5<=75% | N/A | N/A |
| Measured absorption, if LLC of t\_0.5>75% | 0.04 | 0.02 |
| Measured absorption corrected2 | 6.93 | 0.93 |
| Relevant absorption estimate3 | 7.710 | |
| Final estimate (rounded) | **7.7** | |

**1** Values may not calculate exactly due to rounding of figures

2 In accordance with the EFSA Guidance on Dermal Absorption (EFSA Journal 2017;15(6):4873), if recovery is < 95%, absorption can be corrected by addition of the missing material, or normalisation of the data to 100% recovery.

3 8 replicates, absorption = mean + 0.84\*SD

**Table A 2: In-vitro dermal penetration of propamocarb HCl formulated as BAS 743 03 F through human skin - Recovery data**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Concentrate** | | **Dilution 1** | | **Dilution 2** | |
|  | BAS 743 03 F | | 1:251 | | (1:752) | |
| Target concentration [mg/mL] | 451 | | 1.8 | | 0.6 | |
| Target dose [µg/cm2] | 4510 | | 18 | | 6 | |
| Mean actual applied dose [µg/cm2] | 4346 | | 18.5 | | 6.3 | |
| Recovery [%] | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| **Dislodgeable dose** | | | | | | |
| Skin wash after 8 hours | 94.11 | 1.31 | 93.39 | 1.62 | 55.54 | 5.86 |
| Donor chamber wash | 0.14 | 0.07 | 1.39 | 0.50 | 13.24 | 4.55 |
| **Skin associated dose** | | | | | | |
| Tape strips 1-2 | 0.00 | 0.00 | 0.02 | 0.02 | 0.76 | 1.55 |
| Tape strips 3-20 | 0.00 | 0.00 | 0.10 | 0.06 | 2.06 | 1.96 |
| Skin preparation | 0.00 | 0.00 | 0.04 | 0.03 | 1.28 | 0.83 |
| **Absorbed dose** | | | | | | |
| Receptor fluid | 0.10 | 0.18 | 0.78 | 0.43 | 19.91 | 4.78 |
| Receptor chamber wash | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 |
| **Total recovery1** | **94.35** | **1.22** | **95.65** | **1.47** | **92.80** | **1.12** |
| LLC of t\_0.5 absorption | 72.74 | 13.49 | 68.83 | 10.75 | 68.42 | 11.43 |
| Absorption complete? | No | | No | | No | |
| Measured absorption, if LLC of t\_0.5<=75% | 0.10 | 0.18 | 0.86 | 0.42 | 23.26 | 3.36 |
| Measured absorption, if LLC of t\_0.5>75% | N/A | N/A | N/A | N/A | N/A | N/A |
| Measured absorption corrected2 | ~~4.09~~  0.11 | ~~3.43~~  0.20 | 0.86 | 0.42 | 25.05 | 3.48 |
| Relevant absorption estimate3 | ~~6.972~~  0.278 | | 1.213 | | 27.969 | |
| Final estimate (rounded) | **~~7.0~~**  **0.28** | | **1.2** | | **28** | |

**1** Values may not calculate exactly due to rounding of figures

2 In accordance with the EFSA Guidance on Dermal Absorption (EFSA Journal 2017;15(6):4873), if recovery is < 95%, absorption can be corrected by addition of the missing material, or normalisation of the data to 100% recovery.

\* In case of the concentrate the missing recovery for the cells was added, however, taking into account that the dermal absorption of the concentrate is higher than the dermal absorption of dilution 1, the absorption values should be normalized instead of adding the missing recovery, therefore estimated absorption value for concentrate has been corrected accordingly.

3 8 replicates, absorption = mean + 0.84\*SD

Please see attached separate Excel file to this section (“EFSA Dermal absorption Guidance”)

**Conclusion/endpoint:**

The dermal penetration of propamocarb-HCl formulated as BAS 743 02 F, BAS 743 03 F and BAS 743 03 F spray dilutions through human dermatomed skin was determined in vitro. The dermal penetration estimates to be used for risk assessment were set as follows in accordance with EFSA guidance (EFSA Journal 2017;15(6):4873):

|  |  |  |  |
| --- | --- | --- | --- |
| Propamocarb-HCl | | | |
| BAS 743 02 F | BAS 743 03 F | BAS 743 03 F | BAS 743 03 F |
| 1.8 g/L (1:251) | 0.6 g/L (1:752) |
| Concentrate | Concentrate | Dilution 1 | Dilution 2 |
| 7.7% | 7.0%  0.28% | 1.2% | 28% |

* 1. Other/Special Studies
     1. In Vitro micronucleus assay with M650F03 (Reg.No. 5178870)

|  |  |
| --- | --- |
| Comments of zRMS: | Under the experimental conditions reported, no relevant increases in the numbers of micronucleated cells were observed after treatment with M650F03, in the absence and presence of metabolic activation by S9 mix.  Appropriate mutagens were used as positive controls. They induced statistically significant increases in cells with micronuclei.  M650F03 is considered to be non-mutagenic in this *in vitro* micronucleus test in human lymphocytes when tested up to the highest concentration evaluated (2395 µg/mL).  The study is currently under evaluation at EU peer review process for ametoctradin. |

|  |  |
| --- | --- |
| Reference: | CP 7.1.7/1 |
| Report | Reg.No. 5178870 (Metabolite of BAS 650 F, Ametoctradin): Micronucleus Test in Human Lymphocytes In Vitro,  Naumann, S., 2019  report No 866996, 31M0562/05X084; 1974301  2019/2072726  Authority registration No |
| Guideline(s): | OECD 487 (2016), Commission Regulation (EC) No 2017/735 B.49 |
| Deviations: | Yes, The treatment schedule slightly deviates from the proposal of OECD 487 regarding recovery and harvest-time. The study was carried out using the optimal response based on in-house validation experiments of the performing laboratory. Therefore, this deviation does not affect the validity of the study. |
| GLP: | yes  (certified by Hessisches Ministerium fuer Umwelt, Klimaschutz, Landwirtschaft und Verbraucherschutz, Wiesbaden ) | |
| Acceptability: | Yes |
| Duplication  (if vertebrate study) |  |

**Executive Summary**

**Reg.No. 5178870** (Metabolite of BAS 650 F, Ametoctradin, dissolved in culture medium, batch: L81-154, purity: 83.5 ± 1.0 %) was tested for its potential to induce micronuclei in human lymphocytes (pre-activated with phytohemagglutinin) *in vitro* in the absence and presence of metabolic activation by S9 mix. Two independent experiments were performed in duplicate cultures according to the following schedule:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Without S9 mix | | With S9 mix |
| Exp. I | Exp. II | Exp. I |
| Stimulation period | 48 hrs | 48 hrs | 48 hrs |
| Exposure period | 4 hrs | 20 hrs | 4 hrs |
| Recovery | 16 hrs | - | 16 hrs |
| Cytochalasin B exposure | 20 hrs | 20 hrs | 20 hrs |
| Total culture period | 88 hrs | 88 hrs | 88 hrs |

The test substance was tested at concentrations in the range of 15.6 to 2395 µg/mL of out of which the three highest concentrations were evaluated. As the test item was dissolved in culture medium, the solvent control was culture medium without the test item. Mitomycin C (4 h) and demecolcin (20 h) served as positive controls in the absence of metabolic activation and cyclophosphamide (4 h) as positive control in the presence of metabolic activation. After the treatment, cytochalasin B was added and the cultures were fixed and stained after another 20 hours. Cytokinesis-block proliferation index and cytostasis were determined in 1000 binucleated cells (500 cells per culture) as cytotoxicity parameters and the number of micronucleated cells was determined in 2000 binucleated cells (1000 cells per culture) for evaluation of mutagenicity.

No cytotoxicity was observed up to the highest applied concentration. In both experiments, in the absence and presence of S9 mix, no biologically relevant increase in the number of cells carrying micronuclei was observed. Solvent controls revealed values that were within the range of the laboratory historical solvent control data. The positive control chemicals led to statistically significant increase in cells with micronuclei that were also within the historical control data, thus demonstrating the sensitivity of the test system and the validity of the study.

In conclusion, the test item did not induce micronuclei under the experimental conditions reported. Therefore, **Reg.No. 5178870** is considered non-mutagenic in the *in vitro* micronucleus test when tested up to the highest required concentrations with and without metabolic activation.

(XXXX DocID 2019/2072726)

**I. MATERIAL AND METHODS**

**A. MATERIALS**

**1. Test Material Reg.No. 5178870** (Metabolite of BAS 650 F, Ametoctradin, dissolved in culture medium)

Description: Solid, beige

Lot/Batch #: L71-154

Purity: 83.5 ± 1.0 %

Stability of test compound: The stability of the test substance under storage conditions over the test period was guaranteed by the sponsor. This study was performed in an aqueous test system. All formulations were prepared freshly before treatment and used within two hours of preparation

Solvent used: culture medium

**2. Control Materials:**

Negative control: Not applicable

Solvent control: The solvent was culture medium.

Positive control:

- S9 Mitomycin C (MMC, 0.8 µg/mL; pulse treatment) dissolved in deionized water;

Demecolcine (150 ng/mL; continuous treatment) dissolved in deionized water;

+S9 Cyclophosphamide (CPA, 17.5 µg/mL; continuous treatment) dissolved in 0.9 % NaCl (w/v);

**3. Activation:** S9 was produced from phenobarbital/ β-naphthoflavone-induced rat liver and stored frozen. Each batch of S9 was routinely tested for its capability to activate benzo[a]pyrene and 2-aminoanthracene in the Ames test.

Prior to use the S9-fraction was thawed and mixed with co-factor solution (sodium-ortho-phosphate buffer (pH 7.4) 100 mM, Glucose 6-phosphate 5 mM, NADP 4 mM, KCl 33 mM, MgCl2 8 mM). The final protein concentration in the culture medium was 0.75 mg/mL.

**4. Test organism:** Human peripheral blood lymphocytes

Donor(s): Experiment I: 20 years old male, non-smoking, not medicated

Experiment II: 29 years old male, non-smoking, not medicated

**5. Culture media:**

Culture medium: Dulbecco´s Modified Eagles medium/Ham´s F12 (1:1) supplemented with 200 mM GlutaMAX, 10% (v/v), fetal bovine serum (FBS), Pen/Strep (100 U/ml/100 µg/ml), HEPES (10 mM), heparin (125 U.S.P.-U/mL), phytohemeag­glutinine (PHA, 3 µg/mL).

**6. Test concentrations:**

Micronucleus assay

Experiment I

(4-h exposure, -S9): 15.6, 27.2, 47.6, 83.4, 146, 255, 447, **782**, **1369**, **2395** µg/mL (evaluated concentrations are indicated in bold)

(4-h exposure, +S9): 15.6, 27.2, 47.6, 83.4, 146, 255, 447, **782**, **1369**, **2395** µg/mL (evaluated concentrations are indicated in bold)

Experiment II

(20-h exposure, -S9): 146, 255, 447, **782**, **1369**, **2395** µg/mL (evaluated concentrations are indicated in bold)

**B. STUDY DESIGN AND METHODS**

The study was performed at ICCR-Roßdorf GmbH, Rossdorf, Germany

**Dates of experimental work:** 11 September 2019 to 22 October 2019

finalisation date: 20 November 2019

**1. Dose selection:**

With regard to the purity of the test item (83.5 %), concentrations ranging from 15.6 to 2395 μg/mL (± S9 mix) were chosen for the evaluation of cytotoxicity in the first experiment (4-hour exposure). The highest tested concentration of 2395 µg/mL corresponds to 2000 g/mL of the pure test item. For the continuous treatment (-S9-mix) the concentrations ranged from 146-2395 μg/mL. For both experiments the three highest doses were chosen for the evaluation of micronuclei.

**2. Micronucleus test:**

Pulse exposure:

About 48 h after seeding, 2 blood cultures (10 mL each) were set up in parallel in 25 cm² cell culture flasks for each test item concentration and each control. The culture medium was replaced with serum-free medium containing the test item. For the treatment with metabolic activation, the culture medium was supplemented with approx. 2.5 % S9 fraction (50 μL S9 mix/mL culture medium). After 4 hrs the cells were spun down by gentle centrifugation for 5 minutes. The supernatant was discarded, and the cells were resuspended in and washed with "saline G" (pH 7.2, containing 8000 mg/L NaCl, 400 mg/L KCl, 1100 mg/L glucose •H2O, 192 mg/L Na2HPO4 • 2 H2O and 150 mg/L KH2PO4). The washing procedure was repeated once as described. The cells were resuspended in complete culture medium with 10 % FBS (v/v) and cultured for a 16-hour recovery period. After this period Cytochalasin B (4 μg/mL) was added and the cells were cultured another approximately 20 hours until preparation.

Continuous exposure (-S9)

For continuous exposure the cells were washed twice as described above 20 hours after start of treatment before adding fresh culture medium with Cytochalasin B.

Preparation of cells

The cultures were harvested by centrifugation 40 h after beginning of treatment. The cells were spun down by gentle centrifugation for 5 minutes. The supernatant was discarded, and the cells were re-suspended in approximately 5 mL saline G and spun down once again by centrifugation for 5 minutes. Then the cells were resuspended in 5 mL KCl solution (0.0375 M) and incubated at 37 °C for 20 minutes. 1 mL of ice-cold fixative mixture of methanol and glacial acetic acid (19 parts plus 1 part, respectively) was added to the hypotonic solution and the cells were resuspended carefully. After removal of the solution by centrifugation the cells were resuspended for 2 x 20 minutes in fixative and kept cold. The slides were prepared by dropping the cell suspension in fresh fixative onto a clean microscope slide. The cells were stained with Giemsa.

**3. Cytotoxicity evaluation:**

For evaluation of the slides all micronuclei were evaluated in cells showing a clearly visible cytoplasm area with micronuclei not extending the third part of the area of the main nucleus. At least 1000 binucleated cells per culture were evaluated for cytogenetic damage on coded slides. The frequency of micronucleated cells was reported as % micronucleated cells. To describe a cytotoxic effect the CBPI was determined in 500 cells per culture and cytotoxicity is expressed as % cytostasis. A CBPI of 1 (all cells are mononucleate) is equivalent to 100 % cytostasis.

CBPI Cytokinesis-block proliferation index  
n Total number of cells   
MONC Mononucleate cells  
BINC Binucleate cells  
MUNC Multinucleate cells

Cytostasis % = 100 – 100 [(CBPIT – 1) / (CBPIC – 1)]

T Test item   
C Solvent control

**4. Statistics:**

Statistical significance was confirmed by the Chi square test (p < 0.05). Statistical analysis was conducted for those values that indicated an increase in the number of cells with micronuclei compared to the concurrent solvent control.

**5. Evaluation / acceptability criteria:**

Acceptability criteria:

* The concurrent solvent control will normally be within the laboratory historical solvent control data range (95% control limit realized as 95% confidence interval).
* The concurrent positive controls should produce a statistically significant increase in the micronucleus frequency and should be within the laboratory historical positive control data range.
* Cell proliferation criteria in the solvent control are considered to be acceptable.
* All experimental conditions described above were tested unless one exposure condition resulted in a clearly positive result.
* The quality of the slides must allow the evaluation of an adequate number of cells and concentrations.
* The criteria for the selection of top concentration are consistent with those described above.

Evaluation criteria:

**A test item can be classified as non-clastogenic and non-aneugenic if:**

* None of the test item concentrations exhibits a statistically significant increase compared with the concurrent solvent control.
* There is no concentration-related increase.
* The results in all evaluated test item concentrations should be within the range of the laboratory historical solvent control data (95% control limit realized as 95% confidence interval).

**A test item can be classified as clastogenic and aneugenic if:**

* At least one of the test item concentrations exhibits a statistically significant increase compared with the concurrent solvent control.
* The increase is concentration-related in at least one experimental condition.
* The results are outside the range of the laboratory historical solvent control data (95% control limit realized as 95% confidence interval).

**II. RESULTS AND DISCUSSION**

**A. ANALYTICAL DETERMINATIONS**

The stability of the test substance under storage conditions throughout the study period was guaranteed. This study was performed in an aqueous test system. Due to the use of culture medium as vehicle, the verification of the stability of the test substance in the vehicle was not performed.

**B. CYTOTOXICITY, PRECIPITATION AND OSMOLARITY**

No precipitation of the test item was observed in the culture medium at the end of the experiment. No relevant influence on osmolarity was observed. The pH was slightly decreased at the highest tested concentration and was therefore adjusted to physiological values using small amounts of 2M NaOH.

No cytotoxicity indicated by reduced CBPI and described as cytostasis could be observed up to the highest applied concentration in experiment I. Therefore, 2395 µg/mL were used as the highest concentration in experiment II.

**C. MICRONUCLEUS ASSAY**

In both independent experiments, neither a statistically significant nor a biologically relevant increase in the number of micronucleated cells was observed after treatment with the test item.

Demecolcine (150 ng/mL), MMC (0.8 μg/mL) or CPA (17.5 μg/mL) were used as positive controls and showed distinct increases in cells with micronuclei.

Table A 3: Summary of results of the *in vitro* micronucleus test in human lymphocytes with Reg.No. 5178870

| **Exp.** | **Exposure**  **period**  **[h]** | **Test item**  **concentration**  **[µg/mL]** | **Precip.** | **CBPI** | **Cytostasis**  **in %** | **Micronucleated**  **cells \* [%]** | **HCD**  **[95% control**  **limit range]** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Without S9 mix** | | | | | | | |
| I | 4 | Solvent control1 | - | 1.88 |  | 0.70 | 0.01 – 1.20 |
|  |  | Positive control2 | - | 1.65 | 27.8 | **11.70S** | 2.66 – 22.74 |
|  |  | 782 µg/mL | - | 1.83 | n.c. | 0.40 |  |
|  |  | 1369 µg/mL | - | 1.89 | 0.5 | 0.45 |  |
|  |  | 2395 µg/mL | - | 1.83 | 2.9 | 0.50 |  |
| **Without S9 mix** | | | | | | | |
| II | 20 | Solvent control1 | - | 1.73 |  | 0.15 | 0.00 – 1.14 |
|  |  | Positive control3 | - | 1.32 | 49.7 | **3.70S** | 1.15 – 6.44 |
|  |  | 782 µg/mL | - | 1.65 | 2.5 | 0.10 |  |
|  |  | 1369 µg/mL | - | 1.68 | 4.6 | 0.10 |  |
|  |  | 2395 µg/mL | - | 1.67 | n.c. | 0.15 |  |
| **With S9 mix** | | | | | | | |
| I | 4 | Solvent control1 | - | 1.87 |  | 0.35 | 0.00 – 1.24 |
|  |  | Positive control4 | - | 1.88 | 5.3 | **2.70S** | 1.01 – 7.34 |
|  |  | 782 µg/mL | - | 1.83 | n.c. | 0.40 |  |
|  |  | 1369 µg/mL | - | 1.88 | 7.5 | 0.30 |  |
|  |  | 2395 µg/mL | - | 1.80 | 8.9 | 0.40 |  |

n.c. Not calculated as the CBPI is equal or higher than the solvent control value

\* The number of micronucleated cells was determined in a sample of 2000 binucleated cells

**S** The number of micronucleated cells is statistically significantly higher than corresponding control values

- No test item precipitation

+ Test item precipitation

1 Culture medium without test item 2MMC 0.8 µg/mL

3 Demecolcine 150 ng/mL 4CPA 17.5 µg/mL

**III. CONCLUSION**

In conclusion, it can be stated that under the experimental conditions reported, the test item did not induce micronuclei as determined by the *in vitro* micronucleus test in human lymphocytes.

Therefore, **Reg.No. 5178870** (Metabolite of BAS 650 F, Ametoctradin) is considered to be non-mutagenic in this *in vitro* micronucleus test, when tested up to the highest required concentration.

* + 1. In vitro micronucleus assay with M650F04 (Reg.No. 5211623)

|  |  |
| --- | --- |
| Comments of zRMS: | Under the experimental conditions reported, no relevant increases in the numbers of micronucleated cells were observed after treatment with M650F04, in the absence and presence of metabolic activation by S9 mix.  Appropriate mutagens were used as positive controls. They induced statistically significant increases in cells with micronuclei.  M650F04 is considered to be non-mutagenic in this *in vitro* micronucleus test in human lymphocytes when tested up to the highest concentration evaluated (2000 µg/mL).  The study is currently under evaluation at EU peer review process for ametoctradin. |

|  |  |
| --- | --- |
| Reference: | CP 7.1.7/2 |
| Report | Reg.No. 5211623 (Metabolite of BAS 650 F, Ametoctradin): Micronucleus Test in Human Lymphocytes In Vitro,  Naumann, S., 2019  report No 866995, 31M0178/06X097; 1974302  2019/2072738  Authority registration No |
| Guideline(s): | OECD 487 (2016), Commission Regulation (EC) No 2017/735 B.49 |
| Deviations: | Yes, The treatment schedule slightly deviates from the proposal of OECD 487 regarding recovery and harvest-time. The study was carried out using the optimal response based on in-house validation experiments of the performing laboratory. Therefore, this deviation does not affect the validity of the study. |
| GLP: | yes  (certified by Hessisches Ministerium fuer Umwelt, Klimaschutz, Landwirtschaft und Verbraucherschutz, Wiesbaden ) | |
| Acceptability: |  |
| Duplication  (if vertebrate study) | Not applicable |

**Executive Summary**

Reg.No. 5211623 (Metabolite of BAS 650 F, Ametoctradin) (batch n: L74-106; purity: 99.2%) was tested for its potential to induce micronuclei in human lymphocytes (pre-activated with phytohemagglutinin) *in vitro* in the absence and presence of metabolic activation by S9 mix. Two independent experiments were performed in duplicate cultures according to the following schedule:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Without S9 mix | | With S9 mix |
| Exp. I | Exp. II | Exp. I |
| Stimulation period | 48 hrs | 48 hrs | 48 hrs |
| Exposure period | 4 hrs | 20 hrs | 4 hrs |
| Recovery | 16 hrs | - | 16 hrs |
| Cytochalasin B exposure | 20 hrs | 20 hrs | 20 hrs |
| Total culture period | 88 hrs | 88 hrs | 88 hrs |

The test substance was tested at concentrations in the range of 13 to 2000 µg/mL of that three concentrations were evaluated. The culture medium served as solvent control, mitomycin C (4 h) and demecolcine (20 h) as positive controls in the absence of metabolic activation and cyclophosphamide as positive control in the presence of metabolic activation. After treatment/recovery cytochalasin B was added and the cultures were fixed and stained finally after another 20 hours. Cytokinesis-block proliferation index and cytostasis were determined in 1000 binucleated cells as cytotoxicity parameters and number of micronucleated cells was determined in 2000 binucleated cells for evaluation of mutagenicity.

In this study, no precipitation of the test item in the culture medium was observed at the end of treatment. In Experiment I and II in the absence and presence of S9 mix, no cytotoxicity was observed up to the highest applied concentration.

In the absence and presence of S9 mix, no relevant increases in the numbers of micronucleated cells were observed after treatment with the test item

Appropriate mutagens were used as positive controls. They induced statistically significant increases in cells with micronuclei thus ensuring the validity of the study.

Therefore, Reg.No. 5211623 (Metabolite of BAS 650 F, Ametoctradin) is considered to be non-mutagenic in this in vitro micronucleus test, when tested up to the highest required concentration.

(XXXX DocID 2019/2072738)

**I. MATERIAL AND METHODS**

**A. MATERIALS**

**1. Test Material** Reg.No. 5211623 (Metabolite of BAS 650 F, Ametoctradin)

Description: Solid, beige

Lot/Batch #: L74-106

Purity: 99.2% (tolerance +/- 1.0 %)

Stability of test compound: The stability of the test substance under storage conditions over the test period was guaranteed by the sponsor. This study was performed in an aqueous test system. All formulations were prepared freshly before treatment and used within two hours of preparation.

Solvent used: Culture medium.

**2. Control Materials:**

Negative control: A negative control was not employed in this study

Solvent control: culture medium

Positive control:

- S9 Mitomycin C (MMC, 0.8 µg/mL; pulse treatment) dissolved in deionized water;

Demecolcine (Colc, 75 ng/mL; continuous treatment) dissolved in deionized water;

+S9 Cyclophosphamide (CPA, 17.5 μg/mL) dissolved in saline (0.9 % NaCl [w/v]).

**3. Activation:** S9 was produced from phenobarbital/ β-naphthoflavone-induced rat liver and stored frozen. Each batch of S9 was routinely tested for its capability to activate benzo[a]pyrene and 2-aminoanthracene in the Ames test.

Prior to use the S9-fraction was thawed and mixed with co-factor solution (Sodium-ortho-phosphate-buffer (pH 7.4) 100 mM, Glucose 6-phosphate 5 mM, NADP 4 mM, KCl 33 mM, MgCl2 8mM). The final concentration of S9-fraction in the culture medium was 2.5%

**4. Test organism:** Human peripheral blood lymphocytes

Donor(s): non-smoking, not medicated 20- and 29-years old males, for experiment I and II, respectively.

**5. Culture media:**

Culture medium: Dulbecco's Modified Eagles Medium/Ham's F12 (DMEM/F12, mixture 1:1) already supplemented with 200 mM GlutaMAX™. Additionally, the medium was supplemented with penicillin/streptomycin (100 U/mL/100 μg/mL), PHA (3 μg/mL), 10 % FBS (fetal bovine serum), HEPES (10 mM) and heparin (125 U.S.P.-U/mL).

**6. Test concentrations:**

Micronucleus assay

Experiment I

(4-h exposure, -S9): 13.0, 22.7, 39.8, 69.6, 122, 213, 373, **653, 1143** and **2000** µg/mL (evaluated concentrations are indicated in bold)

(4-h exposure, +S9): 13.0, 22.7, 39.8, 69.6, 122, 213, 373, **653, 1143** and **2000** µg/mL (evaluated concentrations are indicated in bold)

Experiment II

(20-h exposure, S9): 122, 213, 373, **653, 1143** and **2000** (evaluated concentrations are indicated in bold)

**B. STUDY DESIGN AND METHODS**

**Dates of experimental work:** 11-Sep-2019 to 21-Oct-2019

finalisation date: Nov-2019

**1. Dose selection:**

Test item concentrations ranging from 13 to 2000 µg/mL (with and without S9 mix) were chosen for the evaluation of cytotoxicity. In the pre-test for toxicity, no precipitation of the test item was observed at the end of treatment. Since the cultures fulfilled the requirements for cytogenetic evaluation, this preliminary test was designated Experiment I. No cytotoxic effects were observed in Experiment I after 4 hours treatment in the absence and presence of S9 mix. Therefore, 2000 μg/mL were chosen as top treatment concentration for Experiment II.

**2. Micronucleus test:**

Pulse exposure:

About 48 hrs after seeding, 2 blood cultures (10 mL each) were set up in parallel in 25 cm² cell culture flasks for each test item concentration and each control. The culture medium was replaced with serum-free medium containing the test item with or without S9 mix. After 4 hrs the cells were spun down by gentle centrifugation and washed twice with "saline G". Then, the cells were resuspended in complete culture medium and cultured for a 16-hour recovery period. After this period Cytochalasin B (4 μg/mL) was added and the cells were cultured another approximately 20 hours until preparation.

Continuous exposure (-S9)

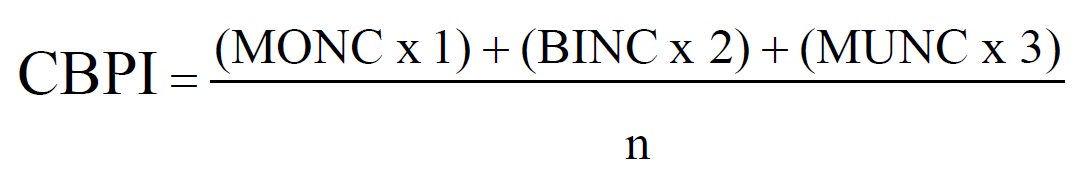
For continuous exposure the cells were washed twice as described above 20 hours after start of treatment before adding fresh culture medium with Cytochalasin B.

Preparation of cells

The cultures were harvested by centrifugation 40 hrs after beginning of treatment. Then the cells were resuspended in hypotonic KCl solution (0.0375 M) and incubated at 37 °C for 20 minutes. Cells were fixated by addition of methanol/ glacial acetic acid and spread on glass slides before staining with Giemsa.

**3. Cytotoxicity evaluation:**

At least 1000 binucleate cells per culture were scored for cytogenetic damage. The frequency of micronucleated cells was reported as % micronucleated cells. To describe a cytotoxic effect the CBPI was determined in 500 cells per culture and cytotoxicity is expressed as % cytostasis. A CBPI of 1 (all cells are mononucleate) is equivalent to 100 % cytostasis.



CBPI Cytokinesis-block proliferation index  
n Total number of cells   
MONC Mononucleate cells  
BINC Binucleate cells  
MUNC Multinucleate cells

Cytostasis % = 100 – 100 [(CBPIT – 1) / (CBPIC – 1)]

T Test item   
C Solvent control

**4. Statistics:**

Statistical significance was confirmed by the Chi square test (p < 0.05). Statistical analysis was conducted for those values that indicated an increase in the number of cells with micronuclei compared to the concurrent solvent control.

**5. Evaluation / acceptability criteria:**

Acceptability criteria:

* The concurrent solvent control will normally be within the laboratory historical solvent control data range (95% control limit realized as 95% confidence interval).
* The concurrent positive controls should produce a statistically significant increase in the micronucleus frequency and should be within the laboratory historical positive control data range.
* Cell proliferation criteria in the solvent control are considered to be acceptable.
* All experimental conditions described in section 5.6.3 were tested unless one exposure condition resulted in a clearly positive result.
* The quality of the slides must allow the evaluation of an adequate number of cells and concentrations.
* The criteria for the selection of top concentration are consistent with those described in the current OECD Guideline for the *in vitro* micronucleus test.

Evaluation criteria:

**A test item can be classified as non-clastogenic and non-aneugenic if:**

* None of the test item concentrations exhibits a statistically significant increase compared with the concurrent solvent control
* There is no concentration-related increase
* The results in all evaluated test item concentrations should be within the range of the laboratory historical solvent control data (95% control limit realized as 95% confidence interval).

**A test item can be classified as clastogenic and aneugenic if:**

* At least one of the test item concentrations exhibits a statistically significant increase compared with the concurrent solvent control
* The increase is concentration-related in at least one experimental condition
* The results are outside the range of the laboratory historical solvent control data (95% control limit realized as 95% confidence interval).

**II. RESULTS AND DISCUSSION**

**A. ANALYTICAL DETERMINATIONS**

The stability of the test substance under storage conditions throughout the study period was guaranteed. This study was performed in an aqueous test system. Due to the use of culture medium as vehicle, the verification of the stability of the test substance in the vehicle was not performed.

**B. CYTOTOXICITY, PRECIPITATION AND OSMOLARITY**

No precipitation of the test item in the culture medium was observed at the end of treatment.

No relevant influence on osmolarity or pH was observed. In Experiment I and II in the absence and presence of S9 mix, no cytotoxicity was observed up to the highest applied concentration.

**C. MICRONUCLEUS ASSAY**

In the absence and presence of S9 mix, no relevant increases in the numbers of micronucleated cells were observed after treatment with the test item.

Table A 4: Summary of results of the *in vitro* micronucleus test in human lymphocytes with Reg.No 5211623 (Metabolite of BAS 650 F, Ametoctradin) with and without metabolic activation

| **Exp.** | **Preparation**  **interval** | **Test item**  **concentration**  **in µg/mL** | **Proliferation**  **Index CBPI** | **Cytostasis**  **in %\*** | **Micronucleated**  **Cells in %\*\*** | **95% Ctrl limit** |
| --- | --- | --- | --- | --- | --- | --- |
| **Exposure period 4 hrs without S9 mix** | | | | | | |
| I | 40 hrs | Solvent control1# | 1.82 |  | 0.55 | 0.01 - 1.20 |
|  |  | Positive control2 | 1.62 | 24.5 | **11.90 s** | 2.66 - 22.74 |
|  |  | 653# | 1.82 | n.c. | 0.33 |  |
|  |  | 1143# | 1.66 | 19.4 | 0.80 |  |
|  |  | 2000# | 1.84 | n.c. | 0.28 |  |
| **Exposure period 20 hrs without S9 mix** | | | | | | |
| II | 40 hrs | Solvent control1 | 1.78 |  | 0.25 | 0.00 – 1.14 |
|  |  | Positive control3 | 1.58 | 25.4 | **5.05 s** | 1.15 – 6.44 |
|  |  | 653 | 1.73 | 6.0 | 0.10 |  |
|  |  | 1143 | 1.81 | n.c. | 0.30 |  |
|  |  | 2000 | 1.73 | 6.8 | 0.15 |  |
| **Exposure period 4 hrs with S9 mix** | | | | | | |
| I | 40 hrs | Solvent control1 | 1.82 |  | 0.70 | 0.00 – 1.24 |
|  |  | Positive control4 | 1.79 | 3.6 | **3.10 s** | 1.01 – 7.34 |
|  |  | 653 | 1.88 | n.c. | 0.40 |  |
|  |  | 1143 | 1.88 | n.c. | 0.35 |  |
|  |  | 2000 | 1.82 | 0.1 | 0.65 |  |

\*For the positive control groups and the test item treatment groups the values are related to the solvent controls

\*\*The number of micronucleated cells was determined in a sample of 2000 binucleated cells

**#** The number of micronucleated cells was determined in a sample of 4000 binucleated cells

**P** Precipitation occurred at the end of treatment

**S** The number of micronucleated cells is statistically significantly higher than corresponding control values

n.c.Not calculated as the CBPI is equal or higher than the solvent control value

1 Culture medium

2 MMC 0.8 µg/mL

3 Demecolcine 75 ng/mL

4 CPA 17.5 µg/mL

**III. CONCLUSION**

In conclusion, it can be stated that under the experimental conditions reported, the test item did not induce micronuclei as determined by the *in vitro* micronucleus test in human lymphocytes. Therefore, **Reg.No. 5211623 (Metabolite of BAS 650 F, Ametoctradin)** is considered to be **non-mutagenic** in this *in vitro* micronucleus test, when tested up to the highest required concentration.

1. Exposure calculations

|  |  |
| --- | --- |
| **~~EFSA model file~~** | **~~Details of the risk assessment~~** |
| ~~Please see attached separate ZIP file to this section (“BAS 743 03 F CEU\_opex1.0.0”)~~ | ~~Dermal absorption for ametoctradin and propamocarb-HCl selected as appropriate to the critical GAP identified in Table 6.1 4.~~ |
| ~~Please see attached separate ZIP file to this section (“BAS 743 03 F CEU DA corrected\_opex1.0.0”)~~ | ~~Dermal absorption for the dilution of propamocarb-HCl correction (i.e. 7%) to assess worker exposure to ornamentals (Use 2 and 4 as detailed in the EFSA Calculator input) and low vegetables (Use 3 as detailed in the EFSA Calculator input)~~ |



* 1. Operator exposure calculations (KCP 7.2.1)

Table A 5: Calculations for outdoor field crops

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Low vegetables/Outdoor/Downward spraying/Vehicle-mounted/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 1 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.08~~ | ~~4.2~~ |
| ~~Propamocarb hcl~~ | ~~Number of applications and application rate: 1 x 0.9396 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 28 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~51.6~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.6~~ |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Low vegetables/Outdoor/Downward spraying/Vehicle-mounted/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 3 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.08~~ | ~~4.2~~ |
| ~~Propamocarb~~ | ~~Number of applications and application rate: 3 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 28 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.2~~ | ~~53.2~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.6~~ |

**Tractor mounted boom spray application outdoors to potato/tomato/aubergine/onion/garlic/floriculture crops**

| **Model data** |  | | **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** |
| --- | --- | --- | --- | --- | --- |
|  | | Low vegetables/Outdoor/Downward spraying/Vehicle-mounted/Drift reduction: 0 %/75th percentile Crop density: Normal | | | |
| Propamocarb |  | | Number of applications and application rate: 3 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 0.28 %  Dermal absorption (in-use dilution): 28 % | | |
|  | | M/L: Workwear  App: Workwear | 0.04 | 13.9 |
| Ametoctradin |  | | Number of applications and application rate: 3 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 % | | |
|  | | M/L: Workwear  App: Workwear | 0.08 | 4.2 |
| **Combined exposure** |  | |  |  | Hazard index |
|  |  | | M/L: Workwear  App: Workwear |  | 0.2 |

~~Table A 6: Calculations for outdoor tomato/aubergine~~

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Low vegetables/Outdoor/Downward spraying/Manual-hand held/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~5.1~~ |
| ~~Propamocarb hcl~~ | ~~Number of applications and application rate: 2 x 0.9396 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.03~~ | ~~10~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.2~~ |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Low vegetables/Outdoor/Downward spraying/Manual-hand held/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~5.1~~ |
| ~~Propamocarb~~ | ~~Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.03~~ | ~~10.3~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.2~~ |

**Hand-held (knapsack) spray application outdoors to tomato/aubergine/ onion/garlic /floriculture crops**

| **Model data** | **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** |
| --- | --- | --- | --- |
| Low vegetables/Outdoor/Downward spraying/Manual-knapsack/Drift reduction: 0 %/75th percentile Crop density: Normal | | | |
| Propamocarb | Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 0.28 %  Dermal absorption (in-use dilution): 28 % | | |
| M/L: Workwear  App: Workwear | 0.05 | 17.3 |
| Ametoctradin | Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 % | | |
| M/L: Workwear  App: Workwear | 0.1 | 5.2 |
| **Combined exposure** |  |  | Hazard index |
|  | M/L: Workwear  App: Workwear |  | 0.2 |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Low vegetables/Outdoor/Downward spraying/Manual-knapsack/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~5.2~~ |
| ~~Propamocarb hcl~~ | ~~Number of applications and application rate: 2 x 0.9396 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.01~~ | ~~4.9~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.1~~ |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Low vegetables/Outdoor/Downward spraying/Manual-knapsack/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~5.2~~ |
| ~~Propamocarb~~ | ~~Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.01~~ | ~~4.9~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.1~~ |

**Hand-held (manual) spray application outdoors to tomato/aubergine/ onion/garlic /floriculture crops**

| **Model data** | **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** |
| --- | --- | --- | --- |
| Low vegetables/Outdoor/Downward spraying/Manual-hand held/Drift reduction: 0 %/75th percentile Crop density: Normal | | | |
| Propamocarb | Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 0.28 %  Dermal absorption (in-use dilution): 28 % | | |
| M/L: Workwear  App: Workwear | 0.1 | 44.7 |
| Ametoctradin | Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 % | | |
| M/L: Workwear  App: Workwear | 0.1 | 5.1 |
| **Combined exposure** |  |  | Hazard index |
|  | M/L: Workwear  App: Workwear |  | 0.5 |

~~Table A 7: Calculations for outdoor onion/ garlic~~

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Low vegetables/Outdoor/Downward spraying/Manual-hand held/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~5.1~~ |
| ~~Propamocarb~~ | ~~Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 28 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.2~~ | ~~52.4~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.6~~ |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Low vegetables/Outdoor/Downward spraying/Manual-knapsack/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~5.2~~ |
| ~~Propamocarb~~ | ~~Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 28 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.06~~ | ~~21~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.3~~ |

Table A 8: Calculations for outdoor high ornamentals

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~High ornamentals/Outdoor/Upward spraying/Vehicle-mounted/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~4.9~~ |
| ~~Propamocarb hcl~~ | ~~Number of applications and application rate: 2 x 0.9396 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.05~~ | ~~17.5~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.2~~ |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~High ornamentals/Outdoor/Upward spraying/Vehicle-mounted/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.1~~ | ~~4.9~~ |
| ~~Propamocarb~~ | ~~Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.05~~ | ~~18~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.2~~ |

**Tractor mounted spray application outdoors to high ornamentals**

| **Model data** | **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** |
| --- | --- | --- | --- |
| High ornamentals/Outdoor/Upward spraying/Vehicle-mounted/Drift reduction: 0 %/75th percentile Crop density: Normal | | | |
| Propamocarb | Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 0.28 %  Dermal absorption (in-use dilution): 1.2 % | | |
| M/L: Workwear  App: Workwear | 0.01 | 4.2 |
| Ametoctradin | Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 % | | |
| M/L: Workwear  App: Workwear | 0.1 | 4.9 |
| **Combined exposure** |  |  | Hazard index |
|  | M/L: Workwear  App: Workwear |  | 0.09 |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~High ornamentals/Outdoor/Upward spraying/Manual-hand held/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.05~~ | ~~2.3~~ |
| ~~Propamocarb hcl~~ | ~~Number of applications and application rate: 2 x 0.9396 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.03~~ | ~~9.9~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.1~~ |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~High ornamentals/Outdoor/Upward spraying/Manual-hand held/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.05~~ | ~~2.3~~ |
| ~~Propamocarb~~ | ~~Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.03~~ | ~~10.1~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.1~~ |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~High ornamentals/Outdoor/Upward spraying/Manual-knapsack/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.03~~ | ~~1.7~~ |
| ~~Propamocarb hcl~~ | ~~Number of applications and application rate: 2 x 0.9396 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.01~~ | ~~4.7~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.06~~ |

**Hand-held (knapsack) spray application outdoors to high ornamentals**

| **Model data** | **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** |
| --- | --- | --- | --- |
| High ornamentals/Outdoor/Upward spraying/Manual-knapsack/Drift reduction: 0 %/75th percentile Crop density: Normal | | | |
| Propamocarb | Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 0.28 %  Dermal absorption (in-use dilution): 1.2 % | | |
| M/L: Workwear  App: Workwear | 0.003 | 1.1 |
| Ametoctradin | Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 % | | |
| M/L: Workwear  App: Workwear | 0.03 | 1.7 |
| **Combined exposure** |  |  | Hazard index |
|  | M/L: Workwear  App: Workwear |  | 0.03 |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- | --- |
| ~~High ornamentals/Outdoor/Upward spraying/Manual-knapsack/Drift reduction: 0 %/75th percentile Crop density: Normal~~ | | | | |
| ~~Ametoctradin~~ | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 %~~ | | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.03~~ | ~~1.7~~ | |
| ~~Propamocarb~~ | ~~Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 7 %  Dermal absorption (in-use dilution): 1.2 %~~ | | | |
| ~~M/L: Workwear  App: Workwear~~ | ~~0.01~~ | ~~4.8~~ | |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ | |
|  | ~~M/L: Workwear  App: Workwear~~ |  | ~~0.06~~ | |

**Hand-held (manual) spray application outdoors to high ornamentals**

| **Model data** | **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** |
| --- | --- | --- | --- |
| High ornamentals/Outdoor/Upward spraying/Manual-knapsack/Drift reduction: 0 %/75th percentile Crop density: Normal | | | |
| Propamocarb | Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption (concentrate): 0.28 %  Dermal absorption (in-use dilution): 1.2 % | | |
| M/L: Workwear  App: Workwear | 0.003 | 1.1 |
| Ametoctradin | Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption (concentrate): 10 %  Dermal absorption (in-use dilution): 50 % | | |
| M/L: Workwear  App: Workwear | 0.03 | 1.7 |
| **Combined exposure** |  |  | Hazard index |
|  | M/L: Workwear  App: Workwear |  | 0.03 |

* 1. Worker exposure calculations (KCP 7.2.3)

Table A 9: Calculations for outdoor field crops

| **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** | **~~Re-entry restriction [days]~~** |
| --- | --- | --- | --- |
| ~~Inspection, irrigation / Outdoor  Work rate: 2 hours/day  Interval: 5 days  Body weight: 60 kg  TC (potential): 12500 cm²/h  TC (workwear (arms, body and legs covered)): 1400 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 1250 cm²/h  TC (gloves): NA cm²/h~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications & application rate: 3 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.4~~ | ~~20.5~~ | ~~0~~ |
| ~~Workwear~~ | ~~0.05~~ | ~~2.3~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.04~~ | ~~2.1~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Propamocarb hcl~~** | ~~Number of applications & application rate: 3 x 0.9396 kg a.s./ha  Dermal absorption: 28 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.9~~ | ~~317~~ | ~~50~~ |
| ~~Workwear~~ | ~~0.1~~ | ~~34~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.09~~ | ~~30.4~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Combined~~** |  | ~~Hazard index~~ |  |
| ~~potential~~ |  | ~~3.2~~ | ~~51~~ |
| ~~Workwear~~ |  | ~~0.4~~ | ~~0~~ |
| ~~Workwear and gloves~~ |  | ~~0.3~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  | ~~0~~ |

| **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** | **~~Re-entry restriction [days]~~** |
| --- | --- | --- | --- |
| ~~Inspection, irrigation (All) / Outdoor  Work rate: 2 hours/day  Interval: 5 days  Body weight: 60 kg  TC (potential): 12500 cm²/h  TC (workwear (arms, body and legs covered)): 1400 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 1250 cm²/h  TC (gloves): NA cm²/h~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications & application rate: 3 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.4~~ | ~~20.5~~ | ~~0~~ |
| ~~Workwear~~ | ~~0.05~~ | ~~2.3~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.04~~ | ~~2.1~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Propamocarb~~** | ~~Number of applications & application rate: 3 x 0.98044 kg a.s./ha  Dermal absorption: 28 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.9~~ | ~~317~~ | ~~50~~ |
| ~~Workwear~~ | ~~0.1~~ | ~~35.5~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.09~~ | ~~31.7~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Combined~~** |  | ~~Hazard index~~ |  |
| ~~potential~~ |  | ~~3.4~~ | ~~53~~ |
| ~~Workwear~~ |  | ~~0.4~~ | ~~0~~ |
| ~~Workwear and gloves~~ |  | ~~0.3~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  | ~~0~~ |

| **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** | **Re-entry restriction [days]** |
| --- | --- | --- | --- |
| Reaching, picking (all except Brassica) / Outdoor  Work rate: 8 hours/day  Interval: 5 days  Body weight: 60 kg  TC (potential): 5800 cm²/h  TC (workwear (arms, body and legs covered)): 2500 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 580 cm²/h  TC (gloves): NA cm²/h | | | |
| **Propamocarb** | Number of applications & application rate: 3 x 0.98044 kg a.s./ha  Dermal absorption: 28 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Potential | 1.7 | 589 | 77 |
| Workwear | 0.7 | 254 | 41 |
| Workwear and gloves | 0.2 | 58.9 | 0 |
| Hands covered, no workwear |  |  |  |
| **Ametoctradin** | Number of applications & application rate: 3 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Potential | 0.8 | 38.1 | 0 |
| Workwear | 0.3 | 16.4 | 0 |
| Workwear and gloves | 0.08 | 3.8 | 0 |
| Hands covered, no workwear |  |  |  |
| **Combined** |  | Hazard index |  |
| potential |  | 6.3 | 80 |
| Workwear |  | 2.7 | 44 |
| Workwear and gloves |  | 0.6 | 0 |
| Hands covered, no workwear |  |  | 0 |

| **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** | **Re-entry restriction [days]** |
| --- | --- | --- | --- |
| **Inspection, irrigation (All) / Outdoor**  Work rate: 2 hours/day  Interval: 5 days  Body weight: 60 kg  TC (potential): 12500 cm²/h  TC (workwear (arms, body and legs covered)): 1400 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 1250 cm²/h  TC (gloves): NA cm²/h | | | |
| **Propamocarb** | Number of applications & application rate: 3 x 0.98044 kg a.s./ha  Dermal absorption: 28 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Potential | 0.9 | 317 | 50 |
| Workwear | 0.1 | 35.5 | 0 |
| Workwear and gloves | 0.09 | 31.7 | 0 |
| Hands covered, no workwear |  |  |  |
| **Ametoctradin** | Number of applications & application rate: 3 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Potential | 0.4 | 20.5 | 0 |
| Workwear | 0.05 | 2.3 | 0 |
| Workwear and gloves | 0.04 | 2.1 | 0 |
| Hands covered, no workwear |  |  |  |
| **Combined** |  | Hazard index |  |
| potential |  | 3.4 | 53 |
| Workwear |  | 0.4 | 0 |
| Workwear and gloves |  | 0.3 | 0 |
| Hands covered, no workwear |  |  | 0 |

Table A 10: Calculations for outdoor low vegetables (tomato/aubergine)

| **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** | **~~Re-entry restriction [days]~~** |
| --- | --- | --- | --- |
| ~~Reaching, picking (all except Brassica) / Outdoor  Work rate: 8 hours/day  Interval: 7 days  Body weight: 60 kg  TC (potential): 5800 cm²/h  TC (workwear (arms, body and legs covered)): 2500 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 580 cm²/h  TC (gloves): NA cm²/h~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications & application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.5~~ | ~~26.3~~ | ~~0~~ |
| ~~Workwear~~ | ~~0.2~~ | ~~11.3~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.05~~ | ~~2.6~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Propamocarb hcl~~** | ~~Number of applications & application rate: 2 x 0.9396 kg a.s./ha  Dermal absorption: 7 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.3~~ | ~~97.3~~ | ~~0~~ |
| ~~Workwear~~ | ~~0.1~~ | ~~42~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.03~~ | ~~9.7~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Combined~~** |  | ~~Hazard index~~ |  |
| ~~potential~~ |  | ~~1.2~~ | ~~10~~ |
| ~~Workwear~~ |  | ~~0.5~~ | ~~0~~ |
| ~~Workwear and gloves~~ |  | ~~0.1~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  | ~~0~~ |

| **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** | **~~Re-entry restriction [days]~~** |
| --- | --- | --- | --- |
| ~~Reaching, picking (all except Brassica) / Outdoor  Work rate: 8 hours/day  Interval: 7 days  Body weight: 60 kg  TC (potential): 5800 cm²/h  TC (workwear (arms, body and legs covered)): 2500 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 580 cm²/h  TC (gloves): NA cm²/h~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications & application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.5~~ | ~~26.3~~ | ~~0~~ |
| ~~Workwear~~ | ~~0.2~~ | ~~11.3~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.05~~ | ~~2.6~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Propamocarb~~** | ~~Number of applications & application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption: 7 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.3~~ | ~~102~~ | ~~1~~ |
| ~~Workwear~~ | ~~0.1~~ | ~~43.8~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.03~~ | ~~10.2~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Combined~~** |  | ~~Hazard index~~ |  |
| ~~potential~~ |  | ~~1.3~~ | ~~11~~ |
| ~~Workwear~~ |  | ~~0.6~~ | ~~0~~ |
| ~~Workwear and gloves~~ |  | ~~0.1~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  | ~~0~~ |

| **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** | **Re-entry restriction [days]** |
| --- | --- | --- | --- |
| Reaching, picking (all except Brassica) / Outdoor  Work rate: 8 hours/day  Interval: 7 days  Body weight: 60 kg  TC (potential): 5800 cm²/h  TC (workwear (arms, body and legs covered)): 2500 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 580 cm²/h  TC (gloves): NA cm²/h | | | |
| **Propamocarb** | Number of applications & application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption: 1.2 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Potential | 0.05 | 17.4 | 0 |
| Workwear | 0.02 | 7.5 | 0 |
| Workwear and gloves | 0.005 | 1.7 | 0 |
| Hands covered, no workwear |  |  |  |
| **Ametoctradin** | Number of applications & application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Potential | 0.5 | 26.3 | 0 |
| Workwear | 0.2 | 11.3 | 0 |
| Workwear and gloves | 0.05 | 2.6 | 0 |
| Hands covered, no workwear |  |  |  |
| **Combined** |  | Hazard index |  |
| potential |  | 0.4 | 0 |
| Workwear |  | 0.2 | 0 |
| Workwear and gloves |  | 0.04 | 0 |
| Hands covered, no workwear |  |  | 0 |

Table A 11: Calculations for outdoor high / low ornamentals

| **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** | **~~Re-entry restriction [days]~~** |
| --- | --- | --- | --- |
| ~~Cutting, sorting, bundling, carrying / Outdoor  Work rate: 8 hours/day  Interval: 7 days  Body weight: 60 kg  TC (potential): 14000 cm²/h  TC (workwear (arms, body and legs covered)): 5000 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 1400 cm²/h  TC (gloves): NA cm²/h~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications & application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~1.3~~ | ~~63.4~~ | ~~0~~ |
| ~~Workwear~~ | ~~0.5~~ | ~~22.6~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.1~~ | ~~6.3~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Propamocarb hcl~~** | ~~Number of applications & application rate: 2 x 0.9396 kg a.s./ha  Dermal absorption: 7 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.7~~ | ~~235~~ | ~~37~~ |
| ~~Workwear~~ | ~~0.2~~ | ~~83.9~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.07~~ | ~~23.5~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Combined~~** |  | ~~Hazard index~~ |  |
| ~~potential~~ |  | ~~3~~ | ~~48~~ |
| ~~Workwear~~ |  | ~~1.1~~ | ~~3~~ |
| ~~Workwear and gloves~~ |  | ~~0.3~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  | ~~0~~ |

| **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** | **~~Re-entry restriction [days]~~** |
| --- | --- | --- | --- |
| ~~Cutting, sorting, bundling, carrying / Outdoor  Work rate: 8 hours/day  Interval: 7 days  Body weight: 60 kg  TC (potential): 14000 cm²/h  TC (workwear (arms, body and legs covered)): 5000 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 1400 cm²/h  TC (gloves): NA cm²/h~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications & application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~1.3~~ | ~~63.4~~ | ~~0~~ |
| ~~Workwear~~ | ~~0.5~~ | ~~22.6~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.1~~ | ~~6.3~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Propamocarb~~** | ~~Number of applications & application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption: 7 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Potential~~ | ~~0.7~~ | ~~245~~ | ~~39~~ |
| ~~Workwear~~ | ~~0.3~~ | ~~87.6~~ | ~~0~~ |
| ~~Workwear and gloves~~ | ~~0.07~~ | ~~24.5~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  |  |
| **~~Combined~~** |  | ~~Hazard index~~ |  |
| ~~potential~~ |  | ~~3.1~~ | ~~49~~ |
| ~~Workwear~~ |  | ~~1.1~~ | ~~5~~ |
| ~~Workwear and gloves~~ |  | ~~0.3~~ | ~~0~~ |
| ~~Hands covered, no workwear~~ |  |  | ~~0~~ |

| **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** | **Re-entry restriction [days]** |
| --- | --- | --- | --- |
| Cutting, sorting, bundling, carrying / Outdoor  Work rate: 8 hours/day  Interval: 7 days  Body weight: 60 kg  TC (potential): 14000 cm²/h  TC (workwear (arms, body and legs covered)): 5000 cm²/h  TC (workwear (arms, body and legs covered) and gloves): 1400 cm²/h  TC (gloves): NA cm²/h | | | |
| **Propamocarb** | Number of applications & application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption: 1.2 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Potential | 0.1 | 42 | 0 |
| Workwear | 0.04 | 15 | 0 |
| Workwear and gloves | 0.01 | 4.2 | 0 |
| Hands covered, no workwear |  |  |  |
| **Ametoctradin** | Number of applications & application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Potential | 1.3 | 63.4 | 0 |
| Workwear | 0.5 | 22.6 | 0 |
| Workwear and gloves | 0.1 | 6.3 | 0 |
| Hands covered, no workwear |  |  |  |
| **Combined** |  | Hazard index |  |
| potential |  | 1.1 | 3 |
| Workwear |  | 0.4 | 0 |
| Workwear and gloves |  | 0.1 | 0 |
| Hands covered, no workwear |  |  | 0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ~~Active:~~ | ~~Propamocarb-HCl~~ | | | | |  | ~~Active:~~ | ~~Ametoctradin~~ | | | | |
| ~~Half-life (days)~~ | | | | | ~~30~~ |  | ~~Half-life (days)~~ | | | | | ~~30~~ |
| ~~Interval between applications (days)~~ | | | | | ~~7~~ |  | ~~Interval between applications (days)~~ | | | | | ~~7~~ |
| ~~Exclusion period/PHI (days)~~ | | | | | ~~3~~ |  | ~~Exclusion period/PHI (days)~~ | | | | | ~~3~~ |
| ~~DFR (µg/cm~~~~2~~~~/kg a.s./ha)~~ | | | | | ~~3~~ |  | ~~DFR (µg/cm~~~~2~~~~/kg a.s./ha)~~ | | | | | ~~3~~ |
| ~~Application rate (kg a.s./ha)~~ | | | | | ~~0.940~~ |  | ~~Application rate (kg a.s./ha)~~ | | | | | ~~0.245~~ |
|  | | | | | |  |  | | | | | |
| ~~Application~~ | ~~N~~~~o~~ | ~~Time~~ | ~~Half life~~ | ~~No of half-lives~~ | ~~Nt~~ |  | ~~Application~~ | ~~N~~~~o~~ | ~~Time~~ | ~~Half life~~ | ~~No of half-lives~~ | ~~Nt~~ |
| ~~1~~ | ~~2.819~~ | ~~10~~ | ~~30~~ | ~~0.33~~ | ~~2.24~~ |  | ~~1~~ | ~~0.734~~ | ~~10~~ | ~~30~~ | ~~0.33~~ | ~~0.58~~ |
| ~~2~~ | ~~2.819~~ | ~~3~~ | ~~30~~ | ~~0.10~~ | ~~2.63~~ |  | ~~2~~ | ~~0.734~~ | ~~3~~ | ~~30~~ | ~~0.10~~ | ~~0.69~~ |
|  | | | | | |  |  | | | | | |
| ~~Total Nt (µg/cm~~~~2~~~~)~~ | | | | | ~~4.87~~ |  | ~~Total Nt (µg/cm~~~~2~~~~)~~ | | | | | ~~1.27~~ |
| ~~Transfer Coefficient (cm~~~~2~~~~/person/hr)~~ | | | | | ~~5000~~ |  | ~~Transfer Coefficient (cm~~~~2~~~~/person/hr)~~ | | | | | ~~5000~~ |
| ~~Duration (hrs)~~ | | | | | ~~8~~ |  | ~~Duration (hrs)~~ | | | | | ~~8~~ |
| ~~Dermal exposure (mg/day)~~ | | | | | ~~194.69~~ |  | ~~Dermal exposure (mg/day)~~ | | | | | ~~50.72~~ |
| ~~Dermal absorption (%)~~ | | | | | ~~7.0%~~ |  | ~~Dermal absorption (%)~~ | | | | | ~~50.0%~~ |
| ~~Body weight (kg)~~ | | | | | ~~60~~ |  | ~~Body weight (kg)~~ | | | | | ~~60~~ |
| ~~Systemic exposure (mg/kg bw/day)~~ | | | | | ~~0.23~~ |  | ~~Systemic exposure (mg/kg bw/day)~~ | | | | | ~~0.42~~ |
| ~~AOEL (mg/kg bw/day)~~ | | | | | ~~0.29~~ |  | ~~AOEL (mg/kg bw/day)~~ | | | | | ~~2.00~~ |
| ~~% of AOEL~~ | | | | | ~~78.32%~~ |  | ~~% of AOEL~~ | | | | | ~~21%~~ |

* 1. Bystander and resident exposure calculations (KCP 7.2.2)

Table A 12: Calculations for outdoor field crops

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Season: Not relevant  Buffer zone: 2-3 m  Drift reduction technology: 0 %  Interval between treatments: 5 days  Minimum volume of water: 100 l~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications and application rate: 3 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ | ~~0.03~~ | ~~1.7~~ |
| ~~Vapour (75th perc.)~~ | ~~2e-08~~ | ~~9e-07~~ |
| ~~Deposits (75th perc.)~~ | ~~0.005~~ | ~~0.3~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.06~~ | ~~2.8~~ |
| ~~Sum (mean)~~ | ~~0.07~~ | ~~3.3~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ | ~~0.008~~ | ~~0.4~~ |
| ~~Vapour (75th perc.)~~ | ~~6e-09~~ | ~~3e-07~~ |
| ~~Deposits (75th perc.)~~ | ~~0.002~~ | ~~0.1~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.03~~ | ~~1.5~~ |
| ~~Sum (mean)~~ | ~~0.03~~ | ~~1.5~~ |
| **~~Propamocarb hcl~~** | ~~Number of applications and application rate: 3 x 0.9396 kg a.s./ha  Dermal absorption: 28 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ | ~~0.07~~ | ~~24.6~~ |
| ~~Vapour (75th perc.)~~ | ~~0.0008~~ | ~~0.3~~ |
| ~~Deposits (75th perc.)~~ | ~~0.01~~ | ~~4.2~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.1~~ | ~~41~~ |
| ~~Sum (mean)~~ | ~~0.1~~ | ~~49.5~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ | ~~0.02~~ | ~~5.8~~ |
| ~~Vapour (75th perc.)~~ | ~~0.0003~~ | ~~0.09~~ |
| ~~Deposits (75th perc.)~~ | ~~0.005~~ | ~~1.7~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.07~~ | ~~22.8~~ |
| ~~Sum (mean)~~ | ~~0.06~~ | ~~22.2~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ |  | ~~0.3~~ |
| ~~Vapour (75th perc.)~~ |  | ~~0.003~~ |
| ~~Deposits (75th perc.)~~ |  | ~~0.05~~ |
| ~~Re-entry (75th perc.)~~ |  | ~~0.4~~ |
| ~~Sum (mean)~~ |  | ~~0.5~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ |  | ~~0.06~~ |
| ~~Vapour (75th perc.)~~ |  | ~~0.0009~~ |
| ~~Deposits (75th perc.)~~ |  | ~~0.02~~ |
| ~~Re-entry (75th perc.)~~ |  | ~~0.2~~ |
| ~~Sum (mean)~~ |  | ~~0.2~~ |

**Tractor mounted spray application outdoors to low crops**

| **Model data** | **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** |
| --- | --- | --- | --- |
| Season: Not relevant  Buffer zone: 2-3 m  Drift reduction technology: 0 %  Interval between treatments: 5 days  Minimum volume of water: 100 l | | | |
| **Ametoctradin** | Number of applications and application rate: 3 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Resident child  Body weight: 10 kg | Drift (75th perc.) | 0.03 | 1.7 |
| Vapour (75th perc.) | 2e-08 | 9e-07 |
| Deposits (75th perc.) | 0.005 | 0.2 |
| Re-entry (75th perc.) | 0.06 | 2.8 |
| Sum (mean) | 0.07 | 3.3 |
| Resident adult   Body weight: 60 kg | Drift (75th perc.) | 0.008 | 0.4 |
| Vapour (75th perc.) | 6e-09 | 3e-07 |
| Deposits (75th perc.) | 0.002 | 0.1 |
| Re-entry (75th perc.) | 0.03 | 1.5 |
| Sum (mean) | 0.03 | 1.5 |
| **Propamocarb** | Number of applications and application rate: 3 x 0.98044 kg a.s./ha  Dermal absorption: 28 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Resident child  Body weight: 10 kg | Drift (75th perc.) | 0.07 | 25.7 |
| Vapour (75th perc.) | 0.0008 | 0.3 |
| Deposits (75th perc.) | 0.01 | 4.4 |
| Re-entry (75th perc.) | 0.1 | 42.8 |
| Sum (mean) | 0.1 | 51.7 |
| Resident adult   Body weight: 60 kg | Drift (75th perc.) | 0.02 | 6.1 |
| Vapour (75th perc.) | 0.0003 | 0.09 |
| Deposits (75th perc.) | 0.005 | 1.7 |
| Re-entry (75th perc.) | 0.07 | 23.8 |
| Sum (mean) | 0.07 | 23.2 |
| **Combined exposure** |  |  | Hazard index |
| Resident child  Body weight: 10 kg | Drift (75th perc.) |  | 0.3 |
| Vapour (75th perc.) |  | 0.003 |
| Deposits (75th perc.) |  | 0.05 |
| Re-entry (75th perc.) |  | 0.5 |
| Sum (mean) |  | 0.5 |
| Resident adult   Body weight: 60 kg | Drift (75th perc.) |  | 0.06 |
| Vapour (75th perc.) |  | 0.0009 |
| Deposits (75th perc.) |  | 0.02 |
| Re-entry (75th perc.) |  | 0.3 |
| Sum (mean) |  | 0.2 |

Table A 13: Calculations for outdoor high ornamentals

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Season: Not relevant  Buffer zone: 5 m  Drift reduction technology: 0 %  Interval between treatments: 7 days  Minimum volume of water: 500 l~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ | ~~0.03~~ | ~~1.7~~ |
| ~~Vapour (75th perc.)~~ | ~~2e-08~~ | ~~9e-07~~ |
| ~~Deposits (75th perc.)~~ | ~~0.002~~ | ~~0.1~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.04~~ | ~~1.9~~ |
| ~~Sum (mean)~~ | ~~0.05~~ | ~~2.7~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ | ~~0.02~~ | ~~0.9~~ |
| ~~Vapour (75th perc.)~~ | ~~6e-09~~ | ~~3e-07~~ |
| ~~Deposits (75th perc.)~~ | ~~0.0008~~ | ~~0.04~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.02~~ | ~~1.1~~ |
| ~~Sum (mean)~~ | ~~0.03~~ | ~~1.5~~ |
| **~~Propamocarb hcl~~** | ~~Number of applications and application rate: 2 x 0.9396 kg a.s./ha  Dermal absorption: 7 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ | ~~0.02~~ | ~~6.3~~ |
| ~~Vapour (75th perc.)~~ | ~~0.0008~~ | ~~0.3~~ |
| ~~Deposits (75th perc.)~~ | ~~0.002~~ | ~~0.6~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.02~~ | ~~7.1~~ |
| ~~Sum (mean)~~ | ~~0.03~~ | ~~10.6~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ | ~~0.01~~ | ~~3.5~~ |
| ~~Vapour (75th perc.)~~ | ~~0.0003~~ | ~~0.09~~ |
| ~~Deposits (75th perc.)~~ | ~~0.0005~~ | ~~0.2~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.01~~ | ~~3.9~~ |
| ~~Sum (mean)~~ | ~~0.02~~ | ~~5.6~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ |  | ~~0.08~~ |
| ~~Vapour (75th perc.)~~ |  | ~~0.003~~ |
| ~~Deposits (75th perc.)~~ |  | ~~0.007~~ |
| ~~Re-entry (75th perc.)~~ |  | ~~0.09~~ |
| ~~Sum (mean)~~ |  | ~~0.1~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ |  | ~~0.04~~ |
| ~~Vapour (75th perc.)~~ |  | ~~0.0009~~ |
| ~~Deposits (75th perc.)~~ |  | ~~0.002~~ |
| ~~Re-entry (75th perc.)~~ |  | ~~0.05~~ |
| ~~Sum (mean)~~ |  | ~~0.07~~ |

**Tractor mounted spray application outdoors to high ornamentals**

| **Model data** | **Level of PPE** | **Total absorbed dose [mg/kg bw per day]** | **% of systemic AOEL** |
| --- | --- | --- | --- |
| Season: Not relevant  Buffer zone: 5 m  Drift reduction technology: 0 %  Interval between treatments: 7 days  Minimum volume of water: 500 l | | | |
| **Propamocarb** | Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption: 1.2 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Resident child  Body weight: 10 kg | Drift (75th perc.) | 0.003 | 1.2 |
| Vapour (75th perc.) | 0.0008 | 0.3 |
| Deposits (75th perc.) | 0.001 | 0.3 |
| Re-entry (75th perc.) | 0.004 | 1.3 |
| Sum (mean) | 0.007 | 2.3 |
| Resident adult   Body weight: 60 kg | Drift (75th perc.) | 0.002 | 0.6 |
| Vapour (75th perc.) | 0.0003 | 0.09 |
| Deposits (75th perc.) | 8e-05 | 0.03 |
| Re-entry (75th perc.) | 0.002 | 0.7 |
| Sum (mean) | 0.003 | 1.1 |
| **Ametoctradin** | Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days | | |
| Resident child  Body weight: 10 kg | Drift (75th perc.) | 0.03 | 1.7 |
| Vapour (75th perc.) | 2e-08 | 9e-07 |
| Deposits (75th perc.) | 0.002 | 0.1 |
| Re-entry (75th perc.) | 0.04 | 1.9 |
| Sum (mean) | 0.05 | 2.7 |
| Resident adult   Body weight: 60 kg | Drift (75th perc.) | 0.02 | 0.9 |
| Vapour (75th perc.) | 6e-09 | 3e-07 |
| Deposits (75th perc.) | 0.0008 | 0.04 |
| Re-entry (75th perc.) | 0.02 | 1.1 |
| Sum (mean) | 0.03 | 1.5 |
| **Combined exposure** |  |  | Hazard index |
| Resident child  Body weight: 10 kg | Drift (75th perc.) |  | 0.03 |
| Vapour (75th perc.) |  | 0.003 |
| Deposits (75th perc.) |  | 0.004 |
| Re-entry (75th perc.) |  | 0.03 |
| Sum (mean) |  | 0.05 |
| Resident adult   Body weight: 60 kg | Drift (75th perc.) |  | 0.02 |
| Vapour (75th perc.) |  | 0.0009 |
| Deposits (75th perc.) |  | 0.0007 |
| Re-entry (75th perc.) |  | 0.02 |
| Sum (mean) |  | 0.03 |

| **~~Model data~~** | **~~Level of PPE~~** | **~~Total absorbed dose [mg/kg bw per day]~~** | **~~% of systemic AOEL~~** |
| --- | --- | --- | --- |
| ~~Season: Not relevant  Buffer zone: 5 m  Drift reduction technology: 0 %  Interval between treatments: 7 days  Minimum volume of water: 500 l~~ | | | |
| **~~Ametoctradin~~** | ~~Number of applications and application rate: 2 x 0.2448 kg a.s./ha  Dermal absorption: 50 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ | ~~0.03~~ | ~~1.7~~ |
| ~~Vapour (75th perc.)~~ | ~~2e-08~~ | ~~9e-07~~ |
| ~~Deposits (75th perc.)~~ | ~~0.002~~ | ~~0.09~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.04~~ | ~~1.9~~ |
| ~~Sum (mean)~~ | ~~0.05~~ | ~~2.7~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ | ~~0.02~~ | ~~0.9~~ |
| ~~Vapour (75th perc.)~~ | ~~6e-09~~ | ~~3e-07~~ |
| ~~Deposits (75th perc.)~~ | ~~0.0008~~ | ~~0.04~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.02~~ | ~~1.1~~ |
| ~~Sum (mean)~~ | ~~0.03~~ | ~~1.5~~ |
| **~~Propamocarb~~** | ~~Number of applications and application rate: 2 x 0.98044 kg a.s./ha  Dermal absorption: 7 %  DFR: 3 µg/cm² foliage per kg a.s./ha  DT50: 30 days~~ | | |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ | ~~0.003~~ | ~~1.2~~ |
| ~~Vapour (75th perc.)~~ | ~~0.0008~~ | ~~0.3~~ |
| ~~Deposits (75th perc.)~~ | ~~0.002~~ | ~~0.6~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.02~~ | ~~7.4~~ |
| ~~Sum (mean)~~ | ~~0.02~~ | ~~7.4~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ | ~~0.002~~ | ~~0.6~~ |
| ~~Vapour (75th perc.)~~ | ~~0.0003~~ | ~~0.09~~ |
| ~~Deposits (75th perc.)~~ | ~~0.0005~~ | ~~0.2~~ |
| ~~Re-entry (75th perc.)~~ | ~~0.01~~ | ~~4.1~~ |
| ~~Sum (mean)~~ | ~~0.01~~ | ~~3.9~~ |
| **~~Combined exposure~~** |  |  | ~~Hazard index~~ |
| ~~Resident child  Body weight: 10 kg~~ | ~~Drift (75th perc.)~~ |  | ~~0.03~~ |
| ~~Vapour (75th perc.)~~ |  | ~~0.003~~ |
| ~~Deposits (75th perc.)~~ |  | ~~0.007~~ |
| ~~Re-entry (75th perc.)~~ |  | ~~0.09~~ |
| ~~Sum (mean)~~ |  | ~~0.1~~ |
| ~~Resident adult   Body weight: 60 kg~~ | ~~Drift (75th perc.)~~ |  | ~~0.02~~ |
| ~~Vapour (75th perc.)~~ |  | ~~0.0009~~ |
| ~~Deposits (75th perc.)~~ |  | ~~0.002~~ |
| ~~Re-entry (75th perc.)~~ |  | ~~0.05~~ |
| ~~Sum (mean)~~ |  | ~~0.05~~ |

1. Detailed evaluation of exposure and/or DFR studies relied upon (KCP 7.2, KCP 7.2.1.1, KCP 7.2.2.1, KCP 7.2.3.1)

None

1. The lowest cut-off value indicates when the presence of a substance needs to be taken into account for the purposes of classification of a mixture containing that hazardous substance, according to section 1.1.2.2 of Annex I to CLP Reg. [↑](#footnote-ref-1)
2. The lowest cut-off value indicates when the presence of a substance needs to be taken into account for the purposes of classification of a mixture containing that hazardous substance, according to section 1.1.2.2 of Annex I to CLP Reg. [↑](#footnote-ref-2)