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| **FINAL REGISTRATION REPORT**  Part B  Section 8  Environmental Fate  **Detailed summary of the risk assessment** |
| **Product code: 054-01-05**  **Product name(s): Meso-Iodo OD-Life**  **Chemical active substance(s):**  **Mesosulfuron-methyl, 10 g/L**  **Iodosulfuron-methyl-sodium, 2 g/L** |
| **Central Zone**  **Zonal Rapporteur Member State: Poland**  **Concerned Member State: Germany** |
| **CORE ASSESSMENT**  **(Authorisation)** |
| **Applicant: Life Scientific Ltd.**  **Submission date: November 2023**  **MS Finalisation date: November 2023; April 2024** |

Version history

|  |  |
| --- | --- |
| When | What |
| November 2023 | Updated dRR provided in response to evaluator request |
| November 2023 | Assessment updated dRR by zRMS |
| April 2024 | The Final Registration Report |
|  |  |

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# Fate and behaviour in the environment (KCP 9)

This application is being submitted to support the registration of Meso-Iodo OD-Life, an oil dispersion (OD) formulation containing 10 g/L mesosulfuron-methyl, 2 g/L iodosulfuron-methyl-sodium and 30 g/L mefenpyr-diethyl in Poland under Regulation (EC) 1107/2009. As the applicant also intends to register the product in Germany, they have been listed as a ‘concerned’ Member State (cMS). This evaluation is required subsequent to the inclusion of mesosulfuron-methyl on Annex I of Directive 91/414/EEC under Commission Directive 2003/119/EC on 1st April 2004. Mesosulfuron-methyl was renewed under Implementing Regulation (EU) 2017/755 on 1st July 2017. Iodosulfuron-methyl-sodium was included on Annex I of Directive 91/414/EEC under Commission Directive 2003/84/EC on 1st January 2004. Iodosulfuron-methyl-sodium was renewed under Implementing Regulation (EU) 2017/407 on 1st April 2017. Meso-Iodo OD-Life will be referred to as product 054-01-05 for the remainder of this document.

Product 054-01-05 is a professional use herbicide formulated as an oil dispersion containing 10 g/L mesosulfuron-methyl, 2 g/L iodosulfuron-methyl-sodium and 30 g/L mefenpyr-diethyl. The product has not previously been evaluated in Poland according to Uniform Principles.

The sources of mesosulfuron-methyl (source 1 (20151195 PWSG), source 2 (20190977 PWSG)) and iodosulfuron-methyl-sodium (20150953 PWSG) have previously been assessed by the CTGB in the Netherlands and deemed technically equivalent to the Annex I reference source. The source of iodosulfuron-methyl-sodium was later assessed by the Central Institute for Supervising and Testing in Agriculture (UKZUZ 038555/2022) in the Czech Republic following Annex I renewal, where it was concluded that the source still met the specification listed in the renewal regulation. The results of each of these assessments were sent to Member States for commenting. Details of the evaluations are available on CIRCA BC.

As part of this application, Life Scientific Ltd. wishes to have the proposed formulation assessed for comparability to the Polish reference product Atlantis 12 OD (10 g/L mesosulfuron-methyl, 2 g/L iodosulfuron-methyl-sodium and 30 g/L mefenpyr-diethyl, OD, authorisation number R-98/2009) of Bayer AG. The applicant considers product 054-01-05 to be comparable, if not identical to Atlantis 12 OD: details provided in Table 1.2-1 in the confidential dossier of this submission (Draft Registration Report – Part C). The uses and claims for which approval is being sought are the same as those already approved for Atlantis 12 OD in Poland.

Atlantis 12 OD (authorisation number R-98/2009) was first authorised on 14th August 2009 and re-registered on 24th August 2020. Given the 30-month data protection period for Atlantis 12 OD and the associated active substances, namely Mesosulfuron-methyl and Iodosulfuron-methyl-sodium, expired in February 2023, a new application is being submitted to apply for the authorisation of product 054-01-05 in Poland, whereby the applicant submits that it is scientifically valid to extrapolate data and information submitted by Bayer AG on Atlantis 12 OD and use it to evaluate product 054-01-05. This includes the data supporting uses that were applied for after the introduction of Regulation 1107 on 14th of June 2011. According to Paragraph 22 of Commission Notice - Technical Guidelines on Data Protection according to Regulation (EC) No. 1107/2009, 2019/C 229/01, new use data attracts 10 years protection from the date of first authorisation of that product in each Member State (not the date of authorisation of the new crop). Therefore, under Regulation 1107, new use data attracts zero data protection when the original 10-year data protection of the product has expired.

The fate and behaviour of the active substance iodosulfuron-methyl-sodium in the environment has been evaluated on EU level according to the Commission Regulation (EU) No. 1107/2009, full details are provided in the EU renewal assessment report and related documents and are summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453).

The fate and behaviour of the active substance mesosulfuron-methyl in the environment has been evaluated on EU level according to the Commission Regulation (EU) No. 1107/2009, full details are provided in the EU renewal assessment report and related documents and are summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584).

The fate and behaviour of the safener mefenpyr-diethylhave been reviewed in a work-sharing project of European competent authorities, in analogy to the procedures foreseen for active substances in Directive 91/414/EEC: France and Austria prepared an assessment report for this substance in the format of a Draft Assessment Report which was “peer-reviewed” (in an unscheduled procedure on voluntary basis) by all Member States in September 2011. The revised assessment report can be found on CIRCA (Archive individual substances – Mefenpyr-diethyl (safener)).

The remainder of this document is addressed by the inclusion of out of protection data in the DAR/RAR for both iodosulfuron-methyl-sodium and mesosulfuron-methyl, and the Atlantis 12 OD re-registration report submitted by Bayer AG. Additionally, updated groundwater calculations are provided using the latest groundwater models, PEARL 5.5.5. and PELMO 6.6.4.

## Critical GAP and overall conclusions

Table 8.1‑1: Critical use pattern of the formulated product

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Use-No. | Member state(s) | Crop and/ or situation  (crop destination / purpose of crop) | F, Fn, Fpn G, Gn, Gpn or I\*\* | Pests or Group of pests controlled  (additionally: developmental stages of the pest or pest group) | **Application** | | | | **Application rate** | | | PHI (days) | Remarks:   e.g. g safener/synergist per ha | **Conclusion** |
| Method / Kind | Timing / Growth stage of crop & season | Max. number  a) per use  b) per crop/ season | Min. interval between applications (days) | kg or L product / ha  a) max. rate per appl.  b) max. total rate per crop/season | g or kg as/ha  a) max. rate per appl.  b) max. total rate per crop/season | Water L/ha  min / max | Groundwater |
| **Zonal uses (field or outdoor uses, certain types of protected crops)** | | | | | | | | | | | | | |  |
| 1 | DE | Winter soft wheat, Winter rye, Winter triticale | F | Silky bent APESV | spraying | 11-25  Post-emergence, autumn | a) 1  b) 1 | -- | 0.6 L/ha | 1.2 g as/ha Iodosulfuron-methyl-sodium  6.0 g as/ha Mesosulfuron-methyl | 200-400 L/ha | F\* |  |  |
| 2 | DE | Winter soft wheat, Winter triticale | F | Black twitch ALOMY,  Silky bent APESV,  Annual meadowgrass POAAN,  Rough meadowgrass POATR,  Common chickweed STEME,  *Matricaria sp.* MATSS | spraying | 11-25  Post-emergence, autumn | a) 1  b) 1 | -- | 1.0 L/ha | 2.0 g as/ha Iodosulfuron-methyl-sodium  10.0 g as/ha Mesosulfuron-methyl | 200-400 L/ha | F\* |  |  |
| 3 | DE | Winter soft wheat | F | Black twitch ALOMY,  Barren bromegrass BROST,  *Lolium sp.* LOLSS,  Annual dicotyledonous weeds TTTDS | spraying | 11-25  Post-emergence, autumn | a) 1  b) 1 | -- | 1.2 L/ha | 2.4 g as/ha Iodosulfuron-methyl-sodium  12.0 g as/ha Mesosulfuron-methyl | 200-400 L/ha | F\* |  |  |
| 4 | DE | Winter soft wheat, Winter rye, Winter triticale | F | Silky bent APESV | spraying | 13-32, post-emergence, spring | a) 1  b) 1 | -- | 0.5 L/ha | 1.0 g as/ha Iodosulfuron-methyl-sodium  5.0 g as/ha Mesosulfuron-methyl | 200-400 L/ha | F\* |  |  |
| 5 | DE | Winter soft wheat, Winter triticale | F | Black twitch ALOMY,  Silky bent APESV,  Annual meadowgrass POAAN,  Rough meadowgrass POATR,  Common chickweed STEME,  *Matricaria sp.* MATSS | spraying | 13-32  Post-emergence, spring | a) 1  b) 1 | -- | 1.0 L/ha | 2.0 g as/ha Iodosulfuron-methyl-sodium  10.0 g as/ha Mesosulfuron-methyl | 200-400 L/ha | F\* |  |  |
| 6 | DE | Winter soft wheat | F | *Lolium sp.* LOLSS,  Wild oat AVEFA | spraying | 13-30  Post-emergence, spring | a) 1  b) 1 | -- | 1.2 L/ha | 2.4 g as/ha Iodosulfuron-methyl-sodium  12.0 g as/ha Mesosulfuron-methyl | 200-400 L/ha | F\* |  |  |
| 7 | DE | Winter soft wheat | F | Black twitch ALOMY,  Barren bromegrass BROST,  Annual dicotyledonous weeds TTTDS | spraying | 13-30  Post-emergence, spring | a) 1  b) 1 | -- | 1.5 L/ha | 3.0 g as/ha Iodosulfuron-methyl-sodium  15.0 g as/ha Mesosulfuron-methyl | 200-400 L/ha | F\* |  |  |
| 8 | PL | Rye  (SECCW) | F | Corn chamomile ANTAR  Silky bent APESV  Volunteer oilseed rape BRSNN  Shepherd's purse CAPBP  Lamb's quarters CHEAL  Scentless mayweed MATIN  Field forget-me-not MYOAR  Corn poppy PAPRH  Yellow charlock SINAR  Common chickweed STEME  Field pennycress THLAR  Field pansy VIOAR  Veronica sp. VERSS | spraying | BBCH 21 - BBCH 31 | a) 1  b) 1 | -- | 0.45 L/ha | (a.s. 1) 0.9 g as/ha  (a.s. 2) 4.5 g as/ha | 200-300 L/ha | F\* |  |  |
| 9 | PL | Winter triticale  (TTLWI)  Winter wheat  (TRZAW) | F | Black twitch ALOMY  Corn chamomile ANTAR  Silky bent APESV  Wild oat AVEFA  Volunteer oilseed rape BRSNN  Barren bromegrass BROSE  Shepherd's purse CAPBP  Lamb's quarters CHEAL  Scentless mayweed MATIN  Field forget-me-not MYOAR  Corn poppy PAPRH  Yellow charlock SINAR  Common chickweed STEME  Field pennycress THLAR  Field pansy VIOAR  Veronica sp. VERSS | spraying | BBCH 21 –  BBCH 31 | a) 1  b) 1 | -- | 1.2 L/ha | (a.s. 1) 2.4 g as/ha  (a.s. 2) 12.0 g as/ha | 200-300 L/ha | F\* | Recommended dose for a single application: 0.45 - 1.2 l/ha. |  |

\* The PHI is covered by the conditions of use and/or the vegetation period remaining between the application of the plant protection product and the use of the product (e. g. harvest) or the setting of a PHI in days is not required resp.

\*\* 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

Explanation for column 15 “Conclusion”

|  |  |
| --- | --- |
| A | Safe use |
| R | Further refinement and/or risk mitigation measures required |
| C | To be confirmed by cMS |
| N | No safe use |

For information on the critical uses assessed during the approval of iodosulfuron-methyl-sodium and mesosulfuron-methyl, please refer to Part B8 Section 8.1 ‘Critical GAP and overall conclusions’ of the Atlantis 12 OD re-registration report submitted by Bayer AG.

## Metabolites considered in the assessment

Table 8.2‑1: Metabolites of mesosulfuron-methyl potentially relevant for exposure assessment (EFSA, 2016)

| Metabolite | Molar mass | Chemical structure | Maximum observed occurrence in compartments | Exposure assessment required due to |
| --- | --- | --- | --- | --- |
| AE F160459 | 489.5 |  | Soil: 8.9% (aerobic), 25.9% (anaerobic)  Water/sediment: 21.6% | PECsoil PECgw PECsw/sed |
| Mesosulfuron (AE F154851) | 489.5 |  | Soil: 16.2% (aerobic)  Water/sediment: 4.9% | PECsoil PECgw PECsw/sed |
| AE F160460 | 475.5 |  | Soil: 8.6% (aerobic)  Water/sediment: 8.4% | PECsoil PECgw PECsw/sed |
| AE F099095 | 198.2 |  | Soil: 29.2% (aerobic)  Water/sediment: 0.9% | PECsoil PECgw PECsw/sed |
| AE F140584 | 322.4 |  | Soil: 5.1% (aerobic)  Water/sediment: 1.9% | PECsoil PECgw PECsw/sed |
| AE F147447 | 290.3 |  | Soil: 5.8% (aerobic), 6.5% (anaerobic)  Water/sediment: 10.9% | PECsoil PECgw PECsw/sed |
| AE F092944 | 155.2 |  | Soil: 10.1% (aerobic)  Water/sediment: 3.2% | PECsoil PECgw  PECsw/sed |
| BCS-CV14885 | 393.4 |  | Water/sediment: 22.0%  Observed in lysimeter studies at averaged yearly concentration in leachate > 0.1µg/L | PECsw/sed PECgw |
| BCS-CO60720 | 407.4 |  | Water/sediment: 13.1% | PECsw/sed |

Table 8.2‑2: Metabolites of iodosulfuron-methyl-sodium potentially relevant for exposure assessment (EFSA, 2016)

| Metabolite | Molar mass | Chemical structure | Maximum observed occurrence in compartments | Exposure assessment required due to |
| --- | --- | --- | --- | --- |
| AE F075736 | 381.4 |  | Soil: 88.5% (aerobic), 67.9% (anaerobic)  Water: 57.0%  Sediment: 15.9%  Water/sediment: 67.8% | PECsoil PECgw PECsw/sed |
| AE F145740 | 493.2 |  | Soil: 8.7% (aerobic)  Water: 9.2%  Sediment: 3.5%  Water/sediment: 12.6% | PECsoil PECgw PECsw/sed |
| AE F145741 | 493.2 |  | Soil: 6.9% (aerobic)  Water: 7.0%  Sediment: 1.9%  Water/sediment: 8.7% | PECsoil PECgw PECsw/sed |
| AE F161778 | 367.3 |  | Soil: 14.5% (aerobic)  Water/sediment: 2.6% | PECsoil PECgw PECsw/sed |
| AE F059411 or IN-A4098  (triazine amine) | 140.1 |  | Soil: 40.9% (aerobic), 23.6% (anaerobic)  Water: 19.3%  Sediment: 8.3  Water/sediment: 27.5% | PECsoil PECgw PECsw/sed |
| BCS-CW81253 | 343.3 |  | Soil: 35.1% (aerobic)  Water/sediment: 0.0001% | PECsoil PECgw PECsw/sed |
| AE 0000119 | 183.2 |  | Soil: 19.9% (aerobic)  Water: 17.7%  Sediment: 15.0%  Water/sediment: 24.9% | PECsoil PECgw PECsw/sed |
| AE 0002166 | 397.4 |  | Soil: 20.0% (photolysis)  Water: 25.1% (photolysis in natural water) | PECsoil PECgw PECsw/sed |
| AE 0014966 | 367.3 |  | Water: 11.8%  Sediment: 5.9%  Water/sediment: 15.5% | PECsw/sed |
| AE 0034855 | 169.1 |  | Water: 16.7%  Sediment: 10.7%  Water/sediment: 24.2% | PECsw/sed |
| AE F159737 | 183.2 |  | Water: 6.1%  Sediment: 1.6%  Water/sediment: 7.8% | PECsw/sed |
| AE 1234964 | 201.2 |  | Water: 6.8%  Sediment: 0.6%  Water/sediment: 7.4% | PECsw/sed |
| AE F154781 | 126.1 |  | Water/sediment: 8.7% | PECsw/sed |

**zRMS Comments:**

Agreed.

The listed metabolites are in agreement with the EFSA conclusion on iodosulfuron-methyl-sodium (EFSA Journal 2016;14(4):4453) and mesosulfuron-methyl (EFSA Journal 2016;14(10):4584).

Table 8.2‑3: Metabolites of mefenpyr-diethyl potentially relevant for exposure assessment (DAR, 2011)

| Metabolite | Molar mass | Chemical structure | Maximum observed occurrence in compartments | Exposure assessment required due to |
| --- | --- | --- | --- | --- |
| AE F113225 | 345.2 |  | Soil: max. 44.1 % of a.s.  Water: max. 82.8 % of a.s. | PECsoil  PECgw  PECsw/sed |
| AE F094270 | 271.11 |  | Soil: max. 72.2 % of a.s.  Water: max. 62.4 % of a.s. | PECsoil  PECgw  PECsw/sed |
| AE F109453 | 317.13 |  | Water: max. 46.5 % of a.s. | PECsw/sed |
| AE F114952 | 345.2 |  | Soil: 11.5%  Water: max. 18.6 % of a.s. | PECsw/sed |
| AE 2211046  (M8) | 391.26 |  | Soil: 11% (photodegradation)  Water/Sediment: 41% (aqueous photolysis) | PECsoil  PECgw  PECsw/sed |

## Rate of degradation in soil (KCP 9.1.1)

Studies on degradation in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.

### Aerobic degradation in soil (KCP 9.1.1.1)

#### Iodosulfuron-methyl-sodium and its metabolites

The fate and behaviour of iodosulfuron-methyl-sodium in soil is discussed in detail in the corresponding document of the EU renewal assessment report where the study references can be found; presented agreed endpoints were taken from EFSA Journal 2016; 14(4): 4453, if not otherwise stated. Data requirements according to Commission Regulation (EU) No. 544/2011 apply.

Under aerobic conditions, degradation of iodosulfuron-methyl-sodium resulted in the formation of eight major metabolites, AE F075736 (up to 88.5%), AE F145740 (up to 8.7%), AE F145741(up to 6.9% at 10 °C only), AE F161778 (up to 13.7% at 20 °C; up to 14.5% at 10 °C), BCS-CW81253 (up to 35.1%), AE 0000119 (up to 19.9%), and AE F059411 (up to 40.9%). The intermediate metabolite AE 002166 was not observed in aerobic soil but in soil photolysis with a maximum occurrence of 20.0%. The degradation pathway of iodosulfuron-methyl-sodium under aerobic conditions in soil is presented in the Figure below.

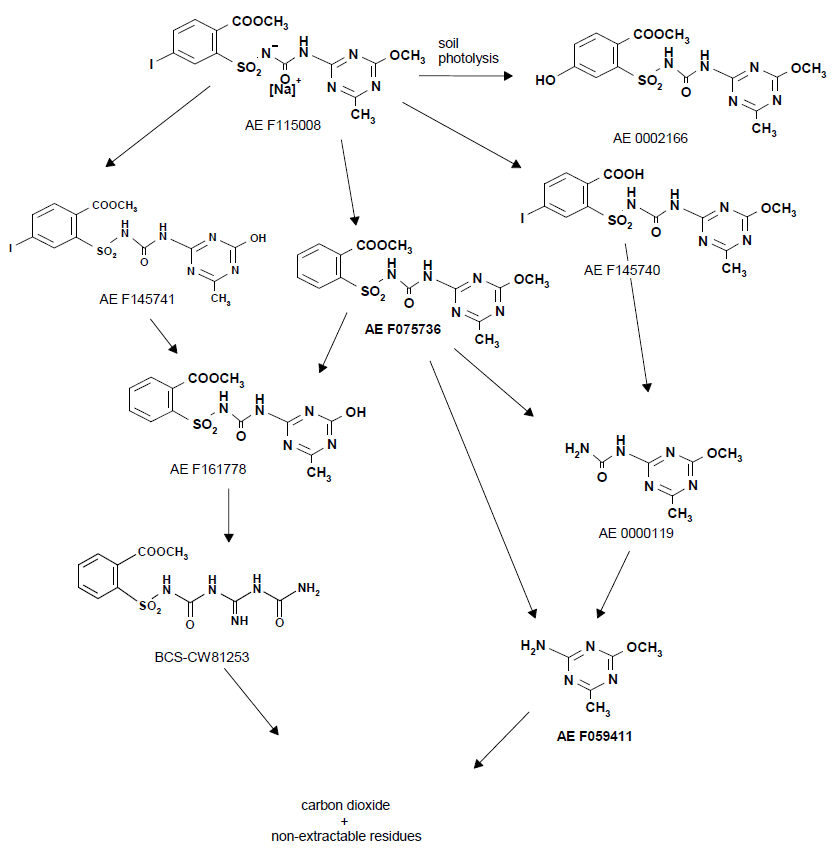


Figure 8.3‑1: Proposed pathway of iodosulfuron-methyl-sodium in soil under aerobic conditions

The kinetics of aerobic degradation of iodosulfuron-methyl-sodium has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453); no additional studies are considered for this assess-ment.

Triggering and modelling endpoints are not explicitly specified in the EFSA conclusion (EFSA Journal 2016;14(4):4453).

**Table 8.3‑1: Summary of aerobic degradation rates for iodosulfuron-methyl-sodium - laboratory studies**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Iodosulfuron-methyl-sodium, Laboratory studies, aerobic conditions** | | | | | | | | | |
| **Soil**  **name** | **Soil type (USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on**  **EU level y/n/ Reference** |
| SL V | Sandy loam | 6.0 | 20 | 40 | 1.7 | 7.3 | 1.6 | 4.4 | FOMC:  α=3.086 β=6.586 | Y/ EFSA  Journal  2016;14(4) |
| LS 2.2 | Loamy sand | 5.6 | 20 | 40 | 1.5 | 5.1 | 1.0 | 5.3 | SFO | Y/ EFSA  Journal  2016;14(4) |
| S 2.1 | Sand | 5.6 | 20 | 40 | 3.1 | 10.2 | 2.9 | 7.1 | SFO | Y/ EFSA  Journal  2016;14(4) |
| SL 2 | Silt loam | 5.4 | 20 | 40 | 0.8 | 2.6 | 0.6 | 1.1 | SFO | Y/ EFSA  Journal  2016;14(4) |
| SL S | Silt loam | 7.3 | 20 | 40 | 2.9 | 9.5 | 2.0 | 8.6 | SFO | Y/ EFSA  Journal  2016;14(4) |
| CL L | Clay loam  a) | 7.1 | 20 | 40 | 3.7 | 12.2 | 2.4 | 8.6 | SFO | Y/ EFSA  Journal  2016;14(4) |
| LS S | Loamy sand | 7.1 | 20 | 40 | 2.7  2.7 | 12.2  9.1 | --  2.1 | 5.1  11.3 | FOMC:  α=2.868 β=9.945 SFO | Y/ EFSA  Journal  2016;14(4) |
| SL FF | Loam | 7.0 | 20 | 40 | 4.3 | 26.7 | 5.8 | 2.9 | FOMC:  α=1.488 β=7.215 | Y/ EFSA  Journal  2016;14(4) |
| CT | Clay | 6.8 | 20 | 50 | 2.2 | 24.4 | 7.2 | 3.6 | FOMC:  α=0.8618 β=1.812 | Y/ EFSA  Journal  2016;14(4) |
| CL B | Clay loam | 7.2 | 20 | 50 | 3.0 | 11.7 | 20.8 | 1.9 | DFOP:  k1=0.2490 k2=0.02819 g=0.9309 | Y/ EFSA  Journal  2016;14(4) |
| Honville | Silt loam | 6.2 | 20 | 40 | 1.4 | 8.0 | 1.9 | 9.8 | FOMC:  α=1.804 β=3.086 | Y/ EFSA  Journal  2016;14(4) |
|  | Geometric mean/Median (n=11) | | | | | | **2.7** | | | |
|  | pH-dependency: y/n | | | | | | No | | | |

a) Stated as loamy sand in EFSA conclusion

**Table 8.3‑2: Summary of aerobic degradation rates for AE F075736 - laboratory studies**

| **AE F075736, Laboratory studies, aerobic conditions** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| SL V | Sandy loam | 6.0 | 20 | 40 | 28.5 | 94.8 | 20.6 | 2.3 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| LS 2.2 | Loamy sand | 5.6 | 20 | 40 | 21.5 | 71.6 | 14.2 | 2.5 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| S 2.1 | Sand | 5.6 | 20 | 40 | 71.6 | 238.0 | 66.7 | 2.4 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL 2 | Silt  loam | 5.4 | 20 | 40 | 69.0 | 229.2 | 51.0 | 1.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL S | Silt  loam | 7.3 | 20 | 40 | 18.7 | 62.1 | 12.8 | 2.7 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| CL L | Clay loam f) | 7.1 | 20 | 40 | 16.6 | 55.1 | 10.6 | 5.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| LS S | Loamy sand | 7.1 | 20 | 40 | 69.8 | 232.1 | 52.7 | 1.9 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL FF | Loam | 7.0 | 20 | 40 | 33.3 | 110.6 | 24.1 | 3.3 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CT | Clay | 6.8 | 20 | 50 | 43.5 | 144.6 | 42.4 | 6.0 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CL B | Clay loam | 7.2 | 20 | 50 | 27.8 | 92.2 | 23.4 | 3.8 | DFOPSFO | Y/ EFSA  Journal  2016;14(4) |
| Honville | Silt  loam | 6.2 | 20 | 40 | 19.7 | 65.5 | 15.3 | 9.8 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| Matapeake, USA b) | Silt  loam | 5.2 | 20 | 75% of soil moisture content  at 33 kPa | 9.0 | 48 | 6.4 | 5 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Speyer 2.2 Germany c) | Loamy sand | 6.1 | 20 | 50% of 0 bar | 26.7 | 88.8 | 26.7 | 6 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Tama, USA c) | Silty clay  loam | 6.8 | 20 | 50% of 0 bar | 15.0 | 82.4 | 24.2 a) | 1 | FOMC | Y/ EFSA  Journal  2016;14(4) |
| Lleida, Spain c) | Clay loam | 7.9 | 20 | 50% of 0 bar | 47.4 | 175.3 | 48.8 | 1 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Nambsheim,  France c) | Sandy loam | 7.6 | 20 | 50% of 0 bar | 39.9 | 132.6 | 39.9 | 3 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Sassafras, USA c) | Sandy loam | 5.5 | 20 | 50% of 0 bar | 17.2 | 57.3 | 17.2 | 5 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Speyer 3A, Germany d) | Sandy loam | 6.3 | 20 | 50% of 0 bar | 28.9 | - | 26.4 | 11.58 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Speyer 2.3, Germany (high  dose) e) | Loamy sand | 6.3 | 20 | 45% | 39.8 | 132.1 | 35.6 | 3.5 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Geometric mean/Median (n=19) | | | | | | | **24.9** | | |  |
| pH-dependency: y/n | | | | | | | No | | |  |

1. DT50 back calculated as DT90/3.32
2. Gorman et al. (1997) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
3. Allan (2010) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
4. Morlock (2006) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
5. Willems, Slangen & Hoitink (2003) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
6. Stated as loamy sand in EFSA conclusion

**Table 8.3‑3: Summary of aerobic degradation rates for AE F145740 - laboratory studies**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE F145740, Laboratory studies, aerobic conditions** | | | | | | | |  |  |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| CL L | Clay loam a) | 7.1 | 20 | 40 | 57.9 | 192.4 | 37.2 | 17.5 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL FF | Loam | 7.0 | 20 | 40 | 76.9 | 255.5 | 55.8 | 8.1 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CL B | Clay loam | 7.2 | 20 | 50 | 61.9 | 205.5 | 52.2 | 16.8 | DFOP-SFO | Y/ EFSA  Journal  2016;14(4) |
| Honville | Silt  loam | 6.2 | 20 | 40 | 53.2 | 176.7 | 41.2 | 23.6 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
|  | Geometric mean/Median (n=4) | | | | | | **46.0** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

a) Stated as loamy sand in EFSA conclusion

**Table 8.3‑4: Summary of aerobic degradation rates for AE F145741 - laboratory studies**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE F145741, Laboratory studies, aerobic conditions** | | | | | | | |  |  |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| SL S | Silt  loam | 7.3 | 20 | 40 | 10.3 | 34.1 | 7.0 | 16.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| CL L | Clay loam a) | 7.1 | 20 | 40 | 8.0 | 26.5 | 5.1 | 25.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| LS S | Loamy sand | 7.1 | 20 | 40 | 2.9 | 9.5 | 2.2 | 31.0 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL FF | Loam | 7.0 | 20 | 40 | 57.5 | 191.0 | 41.7 | 12.2 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CL B | Clay loam | 7.2 | 20 | 50 | 17.8 | 59.0 | 15.0 | 23.6 | DFOP-SFO | Y/ EFSA  Journal  2016;14(4) |
|  | Geometric mean/Median (n=5) | | | | | | **8.7** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

a) Stated as loamy sand in EFSA conclusion

**Table 8.3‑5: Summary of aerobic degradation rates for AE F161778 - laboratory studies**

| **AE F161778, Laboratory studies, aerobic conditions** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| LS 2.2 | Loamy sand | 5.6 | 20 | 40 | 5.2 | 17.2 | 3.4 | 14.9 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| S 2.1 | Sand | 5.6 | 20 | 40 | 13.2 | 43.7 | 12.3 | 27.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL S | Silt  loam | 7.3 | 20 | 40 | 22.0 | 73.0 | 15.0 | 8.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| LS S | Loamy sand | 7.1 | 20 | 40 | 10.5 | 35.0 | 7.9 | 16.7 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL FF | Loam | 7.0 | 20 | 40 | 26.9 | 89.2 | 19.5 | 8.7 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CT | Clay | 6.8 | 20 | 50 | 15.2 | 50.6 | 14.8 | 17.0 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CL B | Clay loam | 7.2 | 20 | 50 | 18.7 | 62.1 | 15.8 | 19.8 | DFOP-SFO | Y/ EFSA  Journal  2016;14(4) |
| Honville | Silt  loam | 6.2 | 20 | 40 | 2.4 | 7.8 | 1.8 | 16.2 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| Arrow, UK a) | Sandy loam | 6.4 (H2O) | 20 | 45 | 30.4 | 100.8 | 30.4 | 6 | SFO | Y/ EFSA  Journal  2016;14(4) |
| GrossUmstadt,  Germany a) | Loam | 7.4 (H2O) | 20 | 45 | 28.3 | 91.4 | 28.3 | 6 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Mattapex, USA a) | Silt  loam | 6.9 (H2O) | 20 | 45 | 28.6 | 95.0 | 28.6 | 4 | SFO | Y/ EFSA  Journal  2016;14(4) |
| LUFA Speyer  2.2 b) | Loamy sand | 5.7 (H2O) | 20 | 45 | 2.44 | - | 2.44 | 3.66 | SFO | Y/ EFSA  Journal  2016;14(4) |
| LUFA Speyer  3A b) | Sandy loam | 7.3 (H2O) | 20 | 45 | 12.8 | - | 12 | 7.92 | SFO | Y/ EFSA  Journal  2016;14(4) |
| LUFA Speyer 6S, Germany b) | Clay | 7.1 (H2O) | 20 | 45 | 29.3 | - | 20.2 | 11.2 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Geometric mean/Median (n=14) | | | | | | | **11.4** | | | |
|  | pH-dependency: y/n | | | | | | No | |  |  |

1. Lewis (2000) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
2. Morlock (2005b) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))

**Table 8.3‑6: Summary of aerobic degradation rates for AE 0000119 - laboratory studies**

|  | **AE 0000119, Laboratory studies, aerobic conditions** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| SL V | Sandy loam | 6.0 | 20 | 40 | 124.8 | 414.6 | 89.9 | 10.3 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| LS 2.2 | Loamy sand | 5.6 | 20 | 40 | 11.9 | 39.4 | 7.8 | 9.7 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| CL L | Clay loam b) | 7.1 | 20 | 40 | 4.0 | 13.2 | 2.5 | 15.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| CT | Clay | 6.8 | 20 | 50 | 13.4 | 44.4 | 8.0 | 17.0 | DFOPSFO | Y/ EFSA  Journal  2016;14(4) |
| Mattapex a) | Sandy loam | 4.35 | 20 | 40 of 0  Bar | 9.8 | 33 | 9.0 | 11 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Lleida a) | Silty clay | 7.50 | 20 | 40 of 0  Bar | 6.6 | 22 | 5.6 | 5 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Nambsheim a) | Sandy loam | 7.01 | 20 | 40 of 0  Bar | 3.3 | 11 | 3.3 | 2 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Goch a) | Silt  loam | 5.13 | 20 | 40 of 0  Bar | 16.1 M0 =  95.3  K1 =  0.008 K2 = 0.175 g = 0.5 | 204.1 | 71.6 (based on slow phase rate constant) | 3 | DFOP | Y/ EFSA  Journal  2016;14(4) |
| Suchozebry a) | Sandy loam | 5.04 | 20 | 40 of 0  Bar | 24.8 M0 =  94.2  K1 =  0.003 K2 = 0.097 g = 0.5 | 542.8 | 231  (based on  slow phase rate constant) | 2 | DFOP | Y/ EFSA  Journal  2016;14(4) |
|  | Geometric mean/Median (n=9) | | | | | | **15** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

a) Tunink, A. (2009) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl and thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015)) b) Stated as loamy sand in EFSA conclusion

**Table 8.3‑7: Summary of aerobic degradation rates for BCS-CW81253 - laboratory studies**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **BCS-CW81253, Laboratory studies, aerobic conditions** | | | | | | | |  |  |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| LS 2.2 | Loamy sand | 5.6 | 20 | 40 | 55.6 | 184.6 | 36.6 | 22.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL S | Silt  loam | 7.3 | 20 | 40 | 13.8 | 46.0 | 9.5 | 9.0 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| SL FF | Loam | 7.0 | 20 | 30 | 22.3 | 74.0 | 16.1 | 5.2 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CT | Clay | 6.8 | 20 | 50 | 54.2 | 179.9 | 52.7 | 9.1 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CL B | Clay loam | 7.2 | 20 | 50 | 11.4 | 37.8 | 9.6 | 18.3 | DFOPSFO | Y/ EFSA  Journal  2016;14(4) |
| Honville | Silt  loam | 6.2 | 20 | 40 | 149.4 | 496.4 | 115.7 | 14.4 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| Arrow, UK a) | Sandy loam | 6.4 (H2O) | 20 | 45 | 52.5 | 174.5 | 52.5 | 11 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Gross-  Umstadt,  Germany a) | Loam | 7.4 (H2O) | 20 | 45 | 16.3 | 54 | 24.7 | 5 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Mattapex, USA a) | Silt  loam | 6.9 (H2O) | 20 | 45 | 24.7 | 82.2 | 16.3 | 12 | SFO | Y/ EFSA  Journal  2016;14(4) |
|  | Geometric mean/Median (n=9) | | | | | | **26.7** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

a) Lewis (2000) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))

**Table 8.3‑8: Summary of aerobic degradation rates for AE F059411 - laboratory studies**

|  | **AE F059411, Laboratory studies, aerobic conditions** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| SL S | Silt  loam | 7.3 | 20 | 40 | 222.1 | 737.9 | 152.0 | 7.4 | SFO-SFO | Y/ EFSA  Journal  2016;14(4) |
| CT | Clay | 6.8 | 20 | 50 | 143.1 | 475.3 | 139.4 | 13.4 | FOMC-  SFO | Y/ EFSA  Journal  2016;14(4) |
| CL B | Clay loam | 7.2 | 20 | 50 | 328.1 | 1089.9 | 276.9 | 4.3 | DFOPSFO | Y/ EFSA  Journal  2016;14(4) |
| Honville b) | Silt  loam | 6.7 (H2O) | 20 | 40 | 260.1 a)  (K1 =  0.01772 K2 =  0.00266  Tb =  25.9) | 864 a) | 201.6 | 3.0 | HS a) | Y/ EFSA  Journal  2016;14(4) |
| Keyport c) | Silt  loam | 4.3 | 25 | 70% FC | 208 | 691 | 254 | 6.2 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Gartenacker d) | Loam | 6.9 | 20 | pF2 | 102.2 | 34 | 102.2 | 3.5 | SFO | Y/ EFSA  Journal  2016;14(4) |
| 18 Acres d) | Sandy clay loam | 5.0 | 20 | pF2 | 249.4 | 828 | 249.4 | 3.2 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Krone d) | Silt  loam | 4.9 | 20 | pF2 | 190.8 | 634 | 190.8 | 3.7 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Soil 2.2 e) | Loamy sand | 5.7 (H2O) | 20 | 45 | 67.3 | 224 | 67.3 | 5.68 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Soil 3A e) | Sandy loam | 7.3 (H2O) | 20 | 45 | 188.4 | 626 | 175.7 | 5.64 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Soil 6S e) | Clay loam | 7.1 (H2O) | 20 | 45 | 333.2 | 1107 | 230.1 | 1.00 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Arrow f) | Sandy loam | 5.7 | 20 | 50 | 44.7  (K1 = 0, fixed lag phase  K2 =  0.03082  Tb =  22.25d) | 97 | 22.5 | 14 | HS (DT50 calculated from slow phase) | Y/ EFSA  Journal  2016;14(4) |
| Speyer 2.1 g) | Sand | 5.5 | 20 | pF2 | 112.5 | 374 | 112.5 | 2.9 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Soil 115 g) | Clay loam | 8.6 | 20 | pF2 | 175.2 | 582 | 175.2 | 3.1 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Soil 243 g) | Sandy loam | 5.6 | 20 | pF2 | 96.4 | 320.2 | 96.4 | 6.2 | SFO | Y/ EFSA  Journal  2016;14(4) |
|  |  | Geometric mean/Median (n=16) | | | | | **144.0** | |  |  |
|  |  | pH-dependency: y/n | | | | | No | |  |  |

1. DT50 as well as DT90 are calculated from the slow phase rate constant (k2).
2. Möndel (2001) (metabolite dosed study, accepted in the RAR for thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
3. Rhodes (1987) (metabolite dosed study, accepted in the RAR for thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
4. Jungmann, Nicollier (2006) (metabolite dosed study, accepted in the RAR for thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
5. Morlock (2006a) (metabolite dosed study, accepted in the RAR for thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
6. Scott (2000) (metabolite dosed study, accepted in the RARs for thifensulfuron methyl, metsulfuron methyl, prosulfuron and triasulfuron; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
7. Wonders and Melkebeke (2002) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl and thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))

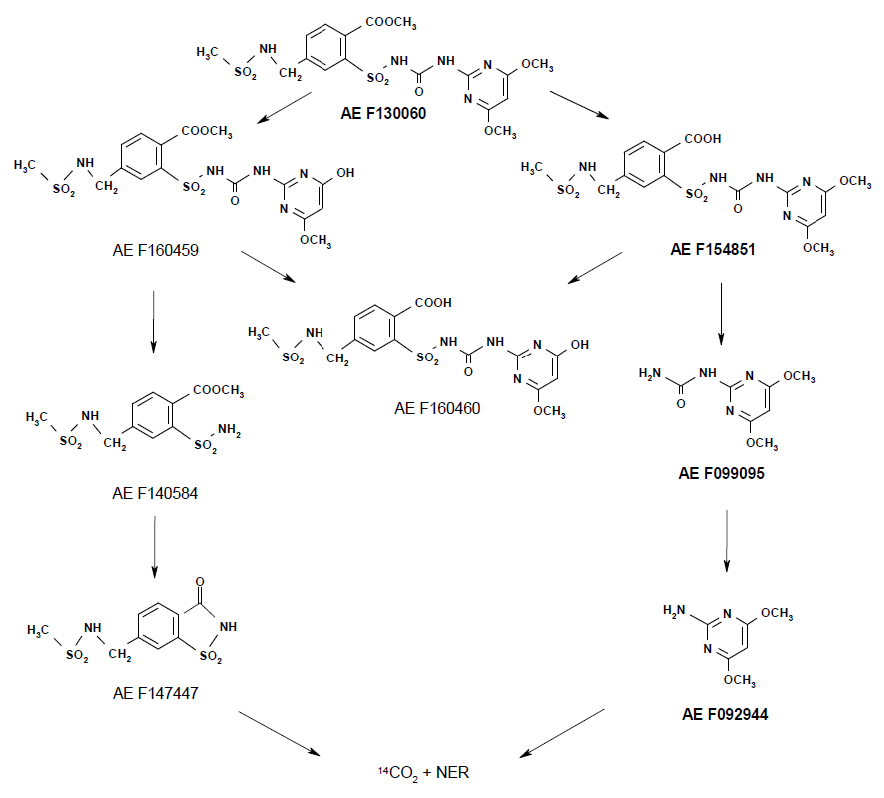
**Table 8.3‑9: Summary of aerobic degradation rates for AE 0002166 - laboratory studies**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE 0002166, Laboratory studies, aerobic conditions** | | | | | | | |  |  |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| Laacher Hof  Allla | Loam | 6.1 | 20 | 55 | 10.1 | 33.6 | 10.1 | 4.1 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Laacher Hof  AXXa | Sandy loam | 6.4 | 20 | 55 | 9.5 | 31.5 | 9.5 | 4.5 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Hoefchen am Hohenseh 4a | Silt  loam | 6.3 | 20 | 55 | 7.2 | 24.0 | 7.2 | 5.9 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Dollendorf II | Clay loam | 7.1 | 20 | 55 | 4.7 | 15.7 | 4.7 | 6.3 | SFO | Y/ EFSA  Journal  2016;14(4) |
|  | Geometric mean/Median (n=4) | | | | | | **7.5** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

#### Mesosulfuron-methyl and its metabolites

The aerobic degradation of mesosulfuron-methyl has been evaluated, full details of these studies are provided in the respective EU renewal assessment report and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584); no additional studies are considered for this assessment.

Under aerobic conditions, degradation of mesosulfuron-methyl resulted in the formation of seven metabolites, AE F154851 (up to 16.2%), AE F160459 (up to 8.9%), AE F099095 (up to 29.2%), AE F092944 (up to 10.1%), AE F160460 (up to 8.6%), AE F140584 (up to 5.1%), and AE F147447 (up to 5.8%). The degradation pathway of mesosulfuron-methyl under aerobic conditions in soil is presented in the Figure below.



**Figure 8.3-2: Proposed pathway of mesosulfuron-methyl in soil under aerobic conditions**

The kinetics of aerobic degradation of mesosulfuron-methyl has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10):4584); no additional studies are considered for this assessment.

**TRIGGER ENDPOINTS:**

**Table 8.3‑10: Summary of aerobic degradation rates for mesosulfuron-methyl - laboratory studies: Trigger Endpoints.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mesosulfuron-methyl, Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | | | | |  |
| **Soil name** | **Soil type (USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on**  **EU level y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | 58.2  Alpha:0.497  Beta: 19.16 | >1000 | - | 2.4 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 16.67 | 55.39 | - | 6.2 | SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | 59.9  Alpha:0.886  Beta: 50.43 | 628.5 | - | 3.2 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 16.0 | 53.0 | - | 2.0 | SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 32.9  Alpha: 2.54  Beta: 104.7 | 155.0 | - | 2.1 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | **140.10** | 465.40 | - | 14.84 | SFO | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt loam | 7.1 | 20 | 54.9 | 7.6 | 25.3 | - | 18.5 | SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | 32.14 Alpha:  0.634  Beta: 16.2 | 595.42 | - | 2.93 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 27.9  Alpha: 2.56  Beta: 89.6 | 130.9 | - | 3.8 | FOMC | Y/ EFSA  Journal  2016;14(10) |

**Table 8.3‑11: Summary of aerobic degradation rates for metabolite AE F160459 - laboratory studies: Trigger Endpoints.**

|  | **AE F160459, Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 128.64 | 427.34 | - | 10.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 38.60 | 128.23 | - | 14.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 76.0 | 252.47 | - | 9.9 | SFO-SFO | Y/ EFSA  Journal 2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | **129.80** | 431.0 | - | 21.68 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - b) | - b) | - | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | - b) | - b) | - | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 84.29 | 280.02 | - | 11.9 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |

1. not observed in this soil in amounts that would allow kinetic evaluation
2. no reliable value could be determined

**Table 8.3‑12: Summary of aerobic degradation rates for metabolite AE F154851 - laboratory studies: Trigger Endpoints.**

|  | **AE F154851, Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | 76.74 | 254.91 | - | 9.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 18.73 | 62.20 | - | 18.6 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | 39.70 | 131.89 | - | 14.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 46.35 | 153.97 | - | 13.4 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 73.93 | 245.59 | - | 14.6 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | **207.38** | 688.91 | - | 19.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | 21.52 | 71.49 | - | 26.1 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 32.95 | 109.46 | - | 11.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |

a) no reliable value could be determined

**Table 8.3‑13: Summary of aerobic degradation rates for metabolite AE F160460**

**- laboratory studies: Trigger Endpoints**

|  | **AE F160460, Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 24.14 | 80.20 | - | 12.0 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 37.07 | 123.15 | - | 13.5 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 36.23 | 120.3 | - |  | SFO-SFO | Y/ EFSA  Journal 2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | - b) | - b) | - | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - b) | - b) | - | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | **44.22** | 196.9 | - | 29.9 | Decline fit | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 15.32 | 50.90 | - | 5.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |

1. not observed in this soil in amounts that would allow kinetic evaluation
2. no reliable value could be determined

**Table 8.3‑14: Summary of aerobic degradation rates for metabolite AE F099095**

**- laboratory studies: Trigger Endpoints**

|  | **AE F099095, Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | | | |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | **185.52** | 616.28 | - | 4.5 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 105.21 | 349.49 | - | 13.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 80.16 | 266.29 | - | 18.4 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 94.19 | 312.89 | - | 9.7 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | 135.08 | 448.71 | - | 25.9 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | 49.1 | 163.1 | - | 7.4 | Decline fit | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | 27.90 | 92.68 | - | 16.28 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | - b) | - b) | - | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| Sandy loam c) | Sandy loam | 5.3 | 20 | pF2 | 58.82 | 195.4 | - | 2.73 | Applied as parent SFO | Y/ EFSA Journal  2016;14(10) |
| Sandy clay loam c) | Sandy clay loam | 6.9 | 20 | pF2 | 23.16 | 76.93 | - | 3.25 | Applied as parent SFO | Y/ EFSA  Journal  2016;14(10) |
| Clay c) | Clay | 7.2 | 20 | pF2 | 12.2 | 40.51 | - | 4.68 | Applied as parent SFO | Y/ EFSA  Journal  2016;14(10) |

1. no reliable value could be determined
2. not traced at this radiolabel position
3. Sadgrove, L 2014 (accepted in the RARs for flazasulfuron; refer to the EFSA conclusion on the peer review of the active flazasulfuron, EFSA Journal 2016; 14(8): 4575)

**Table 8.3‑15: Summary of aerobic degradation rates for metabolite AE F140584 - laboratory studies: Trigger Endpoints.**

|  | **AE F140584, Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | | |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| Sandy loam | Sandy loam | 6.3 | 20 | 55 | 4.02 | 13.34 | - | 4.2 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Sand | Sand | 5.8 | 20 | 55 | 7.04 | 23.38 | - | 2.1 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Silt loam | Silt  loam | 6.4 | 20 | 55 | 2.35 | 7.81 | - | 6.8 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Loam | Loam | 7.2 | 20 | 55 | 1.49 | 4.94 | - | 5.4 | SFO | Y/ EFSA  Journal  2016;14(10) |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | - a) | - a) | - | - a) | - a) | Y/ EFSA Journal 2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | **13.45** | 44.66 | - | 39.7 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |

a) not traced at this radiolabel position

**Table 8.3‑16: Summary of aerobic degradation rates for metabolite AE F147447 - laboratory studies: Trigger Endpoints.**

|  | | **AE F147447, Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil**  **name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/**  **10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| Loam | Loam | 6.1 | 20 | 55 | 54.83 (slow phase:  82.71) k1: 0.0159 ;  k2: 8.38e-3 ; tb: 31.0 | 246.9 | - | 2.8 | HS | Y/ EFSA  Journal  2016;14(10) |
| Sandy loam | Sandy loam | 6.4 | 20 | 55 | 75.98 (slow phase:  111.38) k1: 0.0133 ;  k2: 6.223e-3 ; tb: 31.0 | 334.6 | - | 2.3 | HS | Y/ EFSA  Journal  2016;14(10) |
| Silt loam | Silt loam | 6.3 | 20 | 55 | 54.76 (slow phase:  202.97) k1: 0.0147 ;  k2: 3.415e-3 ; tb: 45.0 | 526.00 | - | 3.9 | HS | Y/ EFSA  Journal  2016;14(10) |
| Clay loam | Clay loam | 7.1 | 20 | 55 | 31.12 (slow phase :  73.32) k1: 0.2054 ;  k2: 9.454e-3 ; g: 0.3297 | 201.2 | - | 3.0 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt loam | 7.1 | 20 | 54.9 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimid  yl label) | Loamy sand | 5.2 | 20 | 55.4 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | **157.14** | 522.0 | - | 11.9 | SFO-  SFO | Y/ EFSA  Journal  2016;14(10) |

a) not traced at this radiolabel position

**Table 8.3‑17: Summary of aerobic degradation rates for metabolite AE F092944 - laboratory studies: Trigger Endpoints.**

| **AE F092944: Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | 13.97 | 46.39 | - | 23.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | - c) | - c) | - | - c) | - c) | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - b) | - b) | - | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 62.55 | 207.77 | - | 21.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | **82.67** | 274.6 | - | 44.1 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | loamy  sand | 5.2 | 20 | 55.4 | 80.52 | 267.49 | - | 27.1 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | loamy  sand | 6.8 | 20 | 38.2 | - b) | - b) | - | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| Collombey d) |  | 7.6 | 20 | 44.2 | 2.9 | 9.6 | - | 6.3 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Speyer 2.2 d) |  | 6 | 20 | 44.3 | 4.9 | 34.8 | - | 2.3 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Les Evouettes  d) |  | 7.3 | 20 | 53.4 | 9.0 | 72.4 | - | 2.6 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Nambsheim e) | sandy  loam | 8 | 20 | 50 | 8.9 | 116 | - | 6 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Pavia e) | loamy  sand | 5.5 | 20 | 50 | 9.7 | 231.3 | - | 4 | HS | Y/ EFSA  Journal  2016;14(10) |
| Speyer 2.2 e) | sandy  loam | 6.7 | 20 | 50 | 2.5 | 12 | - | 4 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Vercelli e) | silt  loam | 6.1 | 20 | 50 | 6 | 122.3 | - | 5 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Pappelacker f) | sandy  loam | 7.3 | 20 | 40 | 6.4 | 30.3 | - | 5.1 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Uffholz f) | loam | 6.1 | 20 | 40 | 5.25 | 34.97 | - | 3.6 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| Otzberg f) | silt  loam | 7.4 | 20 | 40 | 5.9 | 19.6 | - | 5.7 | SFO | Y/ EFSA  Journal  2016;14(10) |

1. no reliable value could be determined
2. not traced at this radiolabel position
3. not observed in this soil in amounts that would allow kinetic evaluation
4. Schmitt and Mikolasch, 2013 (metabolite dosed study, accepted in the RAR for foramsulfuron; refer to the EFSA conclusionon the peer review of the active substance foramsulfuron, - EFSA Journal 2016;14(3):4421)
5. Shaw, D., 2002 (metabolite dosed study, accepted in the RAR for flupyrsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance flupyrsulfuron-methyl, EFSA Journal 2014;12(11):3881)
6. Volkel, 2006 (metabolite dosed study, accepted in the RAR for sulfosulfuron; refer to the EFSA conclusion on the peer review of the active substance sulfosulfuron, EFSA Journal 2014;12(7):3764)

**Table 8.3‑18: Summary of aerobic degradation rates for BCS-CV14885 - laboratory studies: Trigger endpoints.**

|  |  | **BCS-CV14885, Laboratory studies, aerobic conditions;**  **TRIGGER ENDPOINTS** | | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA**  **)** | **pH**  **(CaCl2)** | **t.°C** | **MW**  **HC**  **%** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10k**  **Pa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| Sandy loam | Sandy loam | 6.5 | 20 | 55 | 131.3 (slow phase:  202.73) k1: 0.0106 ;  k2: 3.42e-3 ; tb: 33.8 | 602.1 | - | 1.3 | HS | Y/ EFSA  Journal  2016;14(10) |
| Clay loam | Clay loam | 7.3 | 20 | 55 | 55.34 (slow phase:  129.2)  k1: 0.0514 ; k2: 0,0054 ; g: 0.355 | 347.4 | - | 2.5 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| Silt loam | Silt  loam | 6.4 | 20 | 55 | 102.5 (slow phase:  129.54) k1: 0.1486 ;  k2: 5.351e-3 ; g: 0.1346 | 403.3 | - | 1.4 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| Sandy loam | Sandy loam | 5.4 | 20 | 55 | 128.1 (slow phase:  154.19) k1: 0.1644 ; k2: 0.0045; g: 0.1107 | 486.1 | - | 1.4 | DFOP | Y/ EFSA  Journal  2016;14(10) |

**MODELLING ENDPOINTS**

For parent active substance mesosulfuron-methyl, the EU agreed modelling endpoints comprise of 2 data sets adapted for specific purposes, see listed in Table 8.3‑19 and Table 8.3‑20 below.

**Data in** **Table 8.3‑19** represents a most accurate fit description of the degradation in soil considering also bi-phasic kinetic approaches, which is intended for use in modelling the behaviour of the active substance alone.

**Data in Table 8.3‑20** represents a single first order approximation of mesosulfuron-methyl overall degradation kinetics, which is intended for a practicable implementation of the parent active substance in pathway simulations aiming to generate conservative exposure estimates specifically for the metabolites.

The exposure simulations for the parent active substance alone, based on **Table 8.3‑19** data, may include 2 Tiers:

**Tier 1:** technically simplified but overly conservative approach of considering only the slow phase DT50 of the bi-phasic models for an SFO-based exposure modelling.

**Tier 2:** accurate biphasic implementation of degradation in a DFOP-based exposure modelling.

For biphasic implementation of the degradation in exposure simulations, common DFOP parameters averaged over all soils (geometric mean normalised DT50fast, DT50slow, and arithmetic mean of g values) are needed as input parameters. These derive from the EU List of Endpoints information as follows, see included in **Table 8.3‑19** in italic letters:

* for soils where DFOP was already the model of choice for kinetic evaluation, the listed k1, k2, and g are used directly in form of their corresponding normalised DT50fast, DT50slow, and g.
* for soils where SFO fit was the preferred kinetic model (CLF, LS2.2 phenyl label), this is expressed as a special case of DFOP, where DT50fast and DT50slow have the same value (the parameter g is left unspecified, since for this situation any value of g leads to the same fitted curve).
* for soils (SLI, SLS) where the kinetic evaluation resulted in pseudo-SFO DT50 endpoints ("backDT50" = DT90/3.32) derived from FOMC model, the same approach is applied (same value for both slow and fast phase in DFOP, and g is left unidentified).

Geometric mean DT50fast and DT50slow over all soils are 13.19 d and 49.72 d, respectively, with an arithmetic mean of g = 0.375. This implies that 37.5 % of the compound is associated with the fast phase and 62.5 % with the slow phase compartment. These DT50 values correspond to degradation rates of 0.0528 d-1 (fast) and 0.0139 d-1 (slow), respectively.

**Table 8.3‑19: Summary of aerobic degradation rates for mesosulfuron-methyl**

* + **laboratory studies: Modelling endpoints for modelling the active substance alone, including biphasic approaches.**

|  | **Mesosulfuron-methyl, Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS**  **a) including biphasic approaches – for modelling the parent active substance alone** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil**  **name** | **Soil type (USDA)** | **pH**  **(CaCl2)** | **t.**  **°C** | **MW**  **HC**  **%** | **DT50 (d)** | **DT90 (d)** | **DT50 (d) 20°C pF2/10kPa** | | **Chi2 (%)** | **Kine- tic**  **model** | **Evaluated on EU level**  **y/n/ Reference** |
| **Tier 1**  **SFO**  **DT50** | **Tier 2**  **DFOP**  **DT50fast /**  **DT50slow**  **(g value)** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | 60.5 k1: 0.054 ; k2: 0.004 ;  g: 0.369 | 427 | 173.29  (slow phase) | *12.8 /*  *173.29*  *(0.369)* | 2.8 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 15.5  Back-DT50:  18.76 | 62.3 | 18.76 | *18.76 /*  *18.76*  *(-)* | 4.6 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | 61.7 k1: 0.081 ; k2: 0.007 ;  g: 0.238 | 295.0 | 99.02  (slow phase) | *8.56 /*  *99.02*  *(0.238)* | 3.2 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 15.98 | 53.1 | 15.44 | *15.44 /*  *15.44*  *(-)* | 2.0 | SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 31.9 k1: 0.059 ;  k2: 0.01348; g: 0.302 | 144.2 | 46.43  (slow phase) | *10.61 /*  *46.43*  *(0.302)* | 2.1 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | 67.7 k1: 0.040 ;  k2: 0.00205 ; g: 0.462 | 822.4 | 242.77  (slow phase) | *12.44 /*  *242.77*  *(0.462)* | 5.7 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt loam | 7.1 | 20 | 54.9 | 7.8  Back-DT50:  7.80 | 25.9 | 7.80 | *7.80 /*  *7.80*  *(-)* | 19.3 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimi dyl label) | Loamy sand | 5.2 | 20 | 55.4 | 30.6 k1: 0.062 ;  k2: 0.00517 ; g: 0.503 | 316.1 | 134.07  (slow phase) | *11.8 /*  *134.07*  *(0.503)* | 3.2 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 31.70 | 105.1 | 31.70 | *31.70 /*  *31.70*  *(-)* | 5.6 | SFO | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean DT50 (n=9) Arithmetic mean g value | | | | | | **49.72**  **-** | ***13.19 / 49.72***  ***(0.375)*** | | | |
|  | pH-dependency: y/n | | | | | | No | | | | |

**Table 8.3‑20: Summary of aerobic degradation rates for mesosulfuron-methyl**

* + **laboratory studies: SFO Modelling endpoints, intended for modelling of parent active substance and metabolites.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mesosulfuron-methyl, Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS**  **b) SFO approaches – for modelling the parent active substance and metabolites.** | | | | | | | | | | |
| **Soil name** | **Soil type (USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on**  **EU level y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | 77.3 | 256.9 | 77.3 | 9.1 | SFO | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 16.67 | 55.39 | 16.67 | 6.2 | SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | 71.6 | 238.0 | 71.6 | 7.2 | SFO | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 16.0 | 53.0 | 15.46 | 2.0 | SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 37.5 | 124.7 | 33.86 | 4.3 | SFO | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | 140.10 | 465.40 | 100.59 | 14.8 | SFO | Y/ EFSA Journal 2016;14(10) |
| SLS | Silt loam | 7.1 | 20 | 54.9 | 7.6 | 25.3 | 7.6 | 18.5 | SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | 53.56 | 177.91 | 53.56 | 11.1 | SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 31.44 | 104.44 | 31.44 | 5.6 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=9) | | | | | | | **34.09** | | | |
| pH-dependency: y/n | | | | | | | No | | | |

**Metabolites:**

**Table 8.3‑21: Summary of aerobic degradation rates for metabolite AE F160459**

* + **laboratory studies: Modelling Endpoints**

|  | **AE F160459, Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 128.64 | 427.34 | 128.64 | 10.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 38.60 | 128.23 | 32.29 | 14.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 76.0 | 252.47 | 68.63 | 9.9 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | 129.80 | 431.0 | 93.20 | 21.68 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal 2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 84.29 | 280.02 | 84.29 | 11.9 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean (n=5) | | | | | | **74.14** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

1. not observed in this soil in amounts that would allow kinetic evaluation
2. no reliable value could be determined

**Table 8.3‑22: Summary of aerobic degradation rates for metabolite AE F154851**

**- laboratory studies: Modelling Endpoints**

|  | **AE F154851 Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS** | | | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | 76.74 | 254.91 | 76.74 | 9.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 18.73 | 62.20 | 18.73 | 18.6 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | 39.70 | 131.89 | 38.52 | 14.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 46.35 | 153.97 | 44.77 | 13.4 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 73.93 | 245.59 | 66.76 | 14.6 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | 207.38 | 688.91 | 148.90 | 19.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | 21.52 | 71.49 | 21.52 | 26.1 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 32.95 | 109.46 | 32.95 | 11.2 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean (n=8) | | | | | | **45.22** | |  | |
|  | pH-dependency: y/n | | | | | | No | |  | |

a) no reliable value could be determined

**Table 8.3‑23: Summary of aerobic degradation rates for metabolite AE F160460**

**- laboratory studies: Modelling endpoints**

|  | **AE F160460, Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS** | | | | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 24.14 | 80.20 | 24.14 | 12.0 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 37.07 | 123.15 | 35.81 | 30.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 36.23 | 120.3 | 32.72 | 15.9 | SFO-SFO | Y/ EFSA  Journal 2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | 44.22 | 196.9 | 44.22 | 29.9 | Decline fit | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 15.32 | 50.90 | 15.32 | 5.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean (n=5) | | | | | | **28.61** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

1. not observed in this soil in amounts that would allow kinetic evaluation
2. no reliable value could be determined

**Table 8.3‑24: Summary of aerobic degradation rates for metabolite AE F099095**

**- laboratory studies: Modelling endpoints**

|  | **AE F099095,**  **Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS** | | | | | | |  | |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | 185.52 | 616.28 | 185.52 | 4.5 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | 105.21 | 349.49 | 105.21 | 13.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 80.16 | 266.29 | 77.43 | 18.4 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 94.19 | 312.89 | 85.05 | 9.7 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | 135.08 | 448.71 | 96.99 | 25.9 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | 49.1 | 163.1 | 49.10 | 7.4 | Decline fit | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | 27.90 | 92.68 | 27.90 | 16.28 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl  label) | Loamy  sand | 6.8 | 20 | 38.2 | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal 2016;14(10) |
| Sandy loam c) | Sandy loam | 5.3 | 20 | pF2 | 58.82 | 195.4 | 58.82 | 2.73 | Applied as parent SFO | Y/ EFSA  Journal  2016;14(10) |
| Sandy clay loam c) | Sandy clay loam | 6.9 | 20 | pF2 | 23.16 | 76.93 | 23.16 | 3.25 | Applied as parent SFO | Y/ EFSA  Journal  2016;14(10) |
| Clay c) | Clay | 7.2 | 20 | pF2 | 12.2 | 40.51 | 12.2 | 4.68 | Applied as parent SFO | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean (n=10) | | | | | | **55.6** |  | | |
|  | pH-dependency: y/n | | | | | | No |  | | |

1. no reliable value could be determined
2. not traced at this radiolabel position
3. Sadgrove, L 2014 (accepted in the RARs for flazasulfuron; refer to the EFSA conclusion on the peer review of the active flazasulfuron, EFSA Journal 2016; 14(8): 4575)

**Table 8.3‑25: Summary of aerobic degradation rates for metabolite AE F140584 - laboratory studies: Modelling endpoints.**

|  | **AE F140584, Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS** | | | | | | | |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| Sandy loam | Sandy loam | 6.3 | 20 | 55 | 4.02 | 13.34 | 4.02 | 4.2 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Sand | Sand | 5.8 | 20 | 55 | 7.04 | 23.38 | 7.04 | 2.1 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Silt loam | Silt  loam | 6.4 | 20 | 55 | 2.35 | 7.81 | 2.35 | 6.8 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Loam | Loam | 7.2 | 20 | 55 | 1.49 | 4.94 | 1.49 | 5.4 | SFO | Y/ EFSA  Journal  2016;14(10) |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 13.45 | 44.66 | 13.45 | 39.7 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean (n=5) | | | | | | **4.22** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

a) not traced at this radiolabel position

**Table 8.3‑26: Summary of aerobic degradation rates for metabolite AE F147447 - laboratory studies: Modelling endpoints.**

|  | **AE F147447, Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS** | | | | | | | |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| Loam | Loam | 6.1 | 20 | 55 | 60.6 | 201.3 | 60.6 | 4.9 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Sandy loam | Sandy loam | 6.4 | 20 | 55 | 78.5 | 260.7 | 78.5 | 4.5 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Silt loam | Silt loam | 6.3 | 20 | 55 | 54.76  (slow phase:  202.97) k1: 0.0147 ; k2:  3.415e-3 ; tb: 45.0 | 526.00 | 202.97 | 3.9 | HS | Y/ EFSA  Journal  2016;14(10) |
| Clay loam | Clay loam | 7.1 | 20 | 55 | 31.12  (slow phase :  73.32) k1: 0.2054 ; k2:  9.454e-3 ; g: 0.3297 | 201.2 | 73.32 | 3.0 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt loam | 7.1 | 20 | 54.9 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | - a) | - a) | - | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | 157.14 | 522.0 | 157.14 | 11.9 | SFO-  SFO | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=5) | | | | | | | **102.15** | | | |
| pH-dependency: y/n | | | | | | | No | | | |

1. not traced at this radiolabel position
2. single value

**Table 8.3‑27: Summary of aerobic degradation rates for metabolite AE F092944 - laboratory studies: Modelling Endpoints.**

|  | **AE F092944; Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS** | | | | | | | | |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.(°C)** | **MWHC**  **(%)** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| CHL | Loamy sand | 5.2 | 20 | 31.0 | 13.97 | 46.39 | 13.97 | 23.8 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SLI | Sandy loam | 7.5 | 20 | 45.2 | - c) | - c) | - c) | - c) | - c) | Y/ EFSA  Journal  2016;14(10) |
| SLV | Loamy sand | 6.25 | 20 | 30.8 | - b) | - b) | - | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| CLF | Loam | 7.3 | 20 | 47.5 | 62.55 | 207.77 | 60.42 | 21.3 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| FF | Loam | 7.3 | 20 | 43.2 | 82.67 | 274.6 | - a) | 44.1 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| SCL | Clay | 7.3 | 20 | 59.8 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| SLS | Silt  loam | 7.1 | 20 | 54.9 | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2  (pyrimidyl label) | Loamy sand | 5.2 | 20 | 55.4 | 80.52 | 267.49 | 80.52 | 27.1 | SFO-SFO | Y/ EFSA  Journal  2016;14(10) |
| LS 2.2 (phenyl label) | Loamy sand | 6.8 | 20 | 38.2 | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(10) |
| Collombey d) | Not available | 7.6 | 20 | 44.2 | 2.9 | 9.6 | 2.9 | 6.3 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Speyer 2.2 d) | Not available | 6 | 20 | 44.3 | 4.9 | 34.8 | 10.48 | 2.3 | FOMC | Y/ EFSA Journal 2016;14(10) |
| Les Evouettes  d) | Not available | 7.3 | 20 | 53.4 | 9.0 | 72.4 | 19.6 | 2.6 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Nambsheim e) | sandy  loam | 8 | 20 | 50 | 8.9 | 116 | 30.8 | 6 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Pavia e) | loamy  sand | 5.5 | 20 | 50 | 9.7 | 231.3 | 173.3 | 4 | HS | Y/ EFSA  Journal  2016;14(10) |
| Speyer 2.2 e) | sandy  loam | 6.7 | 20 | 50 | 2.5 | 12 | 3.6 | 4 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Vercelli e) | silt loam | 6.1 | 20 | 50 | 6 | 122.3 | 30.6 | 5 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Pappelacker f) | sandy  loam | 7.3 | 20 | 40 | 6.4 | 30.3 | 8 | 5.1 | FOMC | Y/ EFSA  Journal  2016;14(10) |
| Uffholz f) | loam | 6.1 | 20 | 40 | 5.25 | 34.97 | 11.2 | 3.6 | DFOP | Y/ EFSA  Journal  2016;14(10) |
| Otzberg f) | silt loam | 7.4 | 20 | 40 | 5.9 | 19.6 | 4.4 | 5.7 | SFO | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean (n=13) | | | | | | **16.93** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

1. no reliable value could be determined
2. not traced at this radiolabel position
3. not observed in this soil in amounts that would allow kinetic evaluation
4. Schmitt and Mikolasch, 2013 (metabolite dosed study, accepted in the RAR for foramsulfuron; refer to the EFSA conclusionon the peer review of the active substance foramsulfuron, - EFSA Journal 2016;14(3):4421)
5. Shaw, D., 2002 (metabolite dosed study, accepted in the RAR for flupyrsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance flupyrsulfuron-methyl, EFSA Journal 2014;12(11):3881)
6. Volkel, 2006 (metabolite dosed study, accepted in the RAR for sulfosulfuron; refer to the EFSA conclusion on the peer review of the active substance sulfosulfuron, EFSA Journal 2014;12(7):3764)

**Table 8.3‑28: Summary of aerobic degradation rates for metabolite BCS-CV14885 - laboratory studies: Modelling endpoints.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **BCS-CV14885, Laboratory studies, aerobic conditions,**  **MODELLING ENDPOINTS** | | | | | | | |  |  |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **Chi2 (%)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| Sandy loam | Sandy loam | 6.5 | 20 | 55 | 113.6 | 377.2 | 113.6 | 3.77 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Clay loam | Clay loam | 7.3 | 20 | 55 | 125.7 | 417.5 | 125.7 | 3.01 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Silt loam | Silt  loam | 6.4 | 20 | 55 | 102.8 | 341.4 | 97.7 | 3.48 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Sandy loam | Sandy loam | 5.4 | 20 | 55 | 65.06 | 216.1 | 65.06 | 5.23 | SFO | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean/Median (n=4) | | | | | | **97.6** | |  |  |
|  | pH-dependency: y/n | | | | | | No | |  |  |

#### Mefenpyr-diethyl and its metabolites

**Table 8.3‑29: Summary of aerobic degradation rates for mefenpyr-diethyl - laboratory studies**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mefenpyr-diethyl, Laboratory studies, aerobic conditions** | | | | | | | | | |
| **Soil type** | **pH (CaCl2)** | **t. oC** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20 °C pF2/10kPa** | **Chi2 (%)** | **Method of calculation** | **Evaluated on EU level y/n/**  **Reference** |
| Sandy loam | 5.0 | 25 | 40 | 2.90 | 9.64 | 4.1 | 11.0 | SFO | Y  DAR Mefenpyr-diethyl Vol.3-B8 Sept. 2011 |
| Loamy sand | 6.1 | 25 | 40 | 1.54 | 5.12 | 2.4 | 15.1 | SFO |
| Silt loam | 6.1 | 20 | 40 | 2.32 | 7.69 | 1.7\* | 10.9 | SFO |
| Silt loam | 6.1 | 20 | 60 | 1.06 | 3.52 | 1.1\* | 17.2 | SFO |
| Loamy sand | 7.1 | 20 | 40 | 2.44 | 8.11 | 2.3 | 18.4 | SFO |
| Geometric mean/median (n=5) | | | | | | 2.4/2.3 | | | |
| pH-dependency: y/n | | | | | | No | | | |

**\*** Since there are two DT50 from the same soils, the geometric mean of both values was calculated first (1.4 day), and used as one single value in the calculation of the overall mean/median value.

Table 8.3‑30: Summary of aerobic degradation rates for AE F113225 - laboratory studies

| AE F113225, Laboratory studies, aerobic conditions | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil type | pH  (CaCl2) | t.°C | MWHC % | DT50 (d) | DT90 (d) | f.f. | DT50 (d) 20°C  pF2/10kPa | Chi2 (%) | Kinetic model | Evaluated on EU level y/n/ Reference |
| Sandy loam | 5.0 | 25 | 40 | 5.68 | 18.89 | 0.7313 | 7.9 | 20.4 | SFO | Y  DAR Mefenpyr-diethyl Vol.3-B8 Sept. 2011 |
| Loamy sand | 6.1 | 25 | 40 | 6.77 | 22.50 | 0.7677 | 10.6 | 11.7 | SFO |
| Silt loam | 6.1 | 20 | 40 | 3.47 | 11.52 | 0.7281 | 2.61**\*** | 7.4 | SFO |
| Silt loam | 6.1 | 20 | 60 | 4.56 | 15.17 | 0.7583 | 4.55**\*** | 2.5 | SFO |
| Loamy sand | 7.1 | 20 | 40 | 4.89 | 16.24 | 0.8150 | 4.59 | 16.8 | SFO |
| Arithmetic mean | | | | | | 0.76 | | | | |
| Geometric mean/median (n=5) | | | | | | | 6.1/6.2 | | | |
| pH-dependency: y/n | | | | | | | No | | | |

**\*** Since there are two DT50 from the same soils, the geometric mean of both values was calculated first (3.5 days), and used as one single value in the calculation of the overall mean/median value.

Table 8.3‑31: Summary of aerobic degradation rates for AE F094270 – laboratory studies

| AE F094270, Laboratory studies, aerobic conditions | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil type | pH  (CaCl2) | t.°C | MWHC % | DT50 (d) | DT90 (d) | f.f. \*\* | DT50 (d) 20°C  pF2/10kPa | Chi2 (%) | Kinetic model | Evaluated on EU level y/n/ Reference |
| Sandy loam | 5.0 | 25 | 40 | 270.8 | 900 | 1 | 379 | 6.7 | SFO | Y  DAR Mefenpyr-diethyl Vol.3-B8 Sept. 2011 |
| Loamy sand | 6.1 | 25 | 40 | 258.7 | 859 | 1 | 406 | 4.6 | SFO |
| Silt loam | 6.1 | 20 | 40 | 91.2 | 303 | 1 | 68**\*** | 3.9 | SFO |
| Silt loam | 6.1 | 20 | 60 | 53.1 | 176 | 1 | 53**\*** | 8.2 | SFO |
| Loamy sand | 7.1 | 20 | 40 | 266.2 | 884 | 1 | 250 | 8.1 | SFO |
| Silt loam | 6.8 | 20 | 50 | 126 | 418 | - | 126 | 4.0 | SFO |
| Sandy loam | 6.2 | 20 | 45 | 314 | >1000 | - | 314 | 1.6 | SFO |
| Clay loam | 7.4 | 20 | 50 | 152 | 505 | - | 152 | 3.6 | SFO |
| Arithmetic mean | | | | | | - | | | | |
| Geometric mean/median (n=7) | | | | | | | 202/250 | | | |
| pH-dependency: y/n | | | | | | | No | | | |

**\*** Since there are two DT50 from the same soils, the geometric mean of both values was calculated first (60 days), and used as one single value in the calculation of the overall mean/median value.

\*\* from AE F113225

A **photodegradation** study showed that degradation of mefenpyr-diethyl is slightly enhanced under irradiated conditions compared to dark conditions. A major metabolite, specific to this route of degradation, was identified as AE 2211046 (11% after 1 day). When normalised to 20°C and pF2, the DT50 in soil of this photolytic metabolite is **35.5 days**.

For the full dataset, reference is made to the DAR of mefenpyr-diethyl, Vol. 3 B8 (2011).

### Anaerobic degradation in soil (KCP 9.1.1.1)

#### Iodosulfuron-methyl-sodium and its metabolites

The anaerobic degradation of iodosulfuron-methyl-sodium has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453); no additional studies are considered for this assessment.

Degradation in soil under anaerobic conditions follows basically the same pathways as under aerobic conditions, with generally lower levels of downstream metabolites formed after AE F075736.

**Table 8.3‑32: Summary of anaerobic degradation rates for iodosulfuron-methyl-sodium - laboratory studies**

|  | **Iodosulfuron-methyl-sodium, Laboratory studies, anaerobic conditions** | | | | | | | | |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **St. (r2)** | **Kinetic model** | **Evaluated on EU**  **level y/n/**  **Reference** |
| LS 2.2 | Silt  loam | 7.0 | 20 | flooded | 28.1 | 93.4 | - | 0.997 | SFO | Y/ EFSA  Journal  2016;14(4) |
| SL S | Loamy sand | 6.0 | 20 | flooded | 14.3 | 47.5 | - | 0.990 | SFO | Y/ EFSA  Journal  2016;14(4) |
|  | Geometric mean/Median (n=2) | | | | | | - | | |  |
|  | pH-dependency: y/n | | | | | | - | | |  |

#### Mesosulfuron-methyl and its metabolites

The anaerobic degradation of mesosulfuron-methyl has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584); no additional studies are considered for this assessment.

In anaerobic soil incubations mesosulfuron-methyl transformation was slower than under aerobic conditions, with the degradation pathway being comparable to that under aerobic conditions.

**Table 8.3‑33: Summary of anaerobic degradation rates for mesosulfuron-methyl - laboratory studies**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Mesosulfuron-methyl, Laboratory studies, anaerobic conditions** | | | | | | | | |  |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **St. (r2)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| Sandy loam  (pyrimidyl label) | Sandy loam | 5.4 | 20 | - | 30.1 | - | - | - | Firstorder | Y/ EFSA  Journal  2016;14(10) |
| Sandy loam  (phenyl label) | Sandy loam | 5.4 | 20 | - | 30.5 | - | - | - | Firstorder | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean/Median (n=2) | | | | | | - | | |  |
|  | pH-dependency: y/n | | | | | | - | | |  |

**Table 8.3‑34: Summary of anaerobic degradation rates for AE F160459 - laboratory studies**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE F160459, Laboratory studies, anaerobic conditions** | | | | | | | |  |  |
| **Soil name** | **Soil type**  **(USDA)** | **pH**  **(CaCl2)** | **t.°C** | **MWHC %** | **DT50 (d)** | **DT90 (d)** | **DT50 (d)**  **20°C pF2/10kPa** | **St. (r2)** | **Kinetic model** | **Evaluated on EU level**  **y/n/ Reference** |
| Sandy loam  (pyrimidyl label) | Sandy  loam | 5.4 | 20 | - | 70.2 | - | - | - | First-order | Y/ EFSA  Journal 2016;14(10) |
| Sandy loam  (phenyl label) | Sandy loam | 5.4 | 20 | - | 81.4 | - | - | - | First-order | Y/ EFSA  Journal  2016;14(10) |
|  | Geometric mean/Median (n=2) | | | | | | - | |  |  |

#### Mefenpyr-diethyl and its metabolites

The degradation of mefenpyr-diethyl under anaerobic laboratory conditions was investigated in a sandy loam soil to result in no significant deviation from the route of degradation under aerobic conditions. The generally reduced microbial activity under anaerobic conditions resulted in a slow-down for the rate of degradation.

## Field studies (KCP 9.1.1.2)

### Soil dissipation testing on a range of representative soils (KCP 9.1.1.2.1)

#### Iodosulfuron-methyl-sodium and its metabolites

The field dissipation of iodosulfuron-methyl-sodium has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453); no additional studies are considered for this assessment.

Worst case normalised laboratory data (DT50 soil = 12.2 d) was used for PECsoil calculations of the parent as this value is higher than the DT50 (10.3 d) measured in the field, and hence represents a more conservative approach for the PECsoil calculations.

For higher tier PEC calculations (e.g. PECgw) for the parent compound and metabolite AE F075736 also the field data are considered.

**No differentiation between triggering and modelling endpoints is made in the EFSA conclusion (EFSA Journal 2016;14(4):4453).**

**Table 8.4‑1: Summary of aerobic degradation rates for iodosulfuron-methyl-sodium - field studies**

|  |  |  | **Iodosulfuron-methyl-sodium, Field studies** | | | | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil type** | **Location** | **pHa)** | **Depth (cm)** | **DissT50**  **(d) actual** | **DT90**  **(d) actual** | **DT50 (d) Normb)** | **St. (**𝒙**2)** | **Method of calculation** | **Evaluated on**  **EU level y/n/**  **Reference** |
| Silt loam (Duerrn) | S Germany | 6.9 | 0-30 |  |  | 10.3 | 14.3 | SFO | Y/ EFSA Journal 2016;14(4) |
| Silt loam (Warpe) | N Germany | 6.4 | 0-30 |  |  | 0.8 | 13.6 | SFO | Y/ EFSA Journal 2016;14(4) |
| Silt loam (Rotgla) | Spain | 7.8 | 0-30 |  |  | 4.8 | 10.4 | SFO | Y/ EFSA Journal 2016;14(4) |
| Silt loam (S. Jean de) | S France | 7.4 | 0-30 |  |  | 2.4 | 17.1 | SFO | Y/ EFSA Journal 2016;14(4) |
| Silt (Schleithal) | N France | 5.8 | 0-30 |  |  | 3.7 | 8.0 | SFO | Y/ EFSA Journal 2016;14(4) |
|  |  |  | Geometric mean (n=5) | | | **3.2** | |  | |

1. Medium for measurement of soil pH not stated
2. Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7.

**Table 8.4‑2: Summary of aerobic degradation rates for AE F075736 - field studies**

| **AE F075736, Field studies** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil type** | **Location** | **pHa)** | **Depth (cm)** | **DissT50 (d) actual** | **DT90 (d) actual** | **DT50 (d) Normb)** | **St.**  **(**𝒙**2)** | **Method of calc.** | **Evaluated on**  **EU level y/n/**  **Reference** |
| Silt loam (Duerrn) | S Germany | 6.9 | 0-30 |  |  | 7.9 | 34.1 | SFO-SFO | Y/ EFSA Journal 2016;14(4) |
| Silt loam (Warpe) | N Germany | 6.4 | 0-30 |  |  | 19.0 | 38.0 | SFO-SFO | Y/ EFSA Journal 2016;14(4) |
| Silt loam (Rotgla) | Spain | 7.8 | 0-30 |  |  | 34.9 | 27.3 | SFO-SFO | Y/ EFSA Journal 2016;14(4) |
| Silt loam (S.  Jean de  Blaignac) | S France | 7.4 | 0-30 |  |  | 11.4 | 29.5 | SFO-SFO | Y/ EFSA Journal 2016;14(4) |
| Silt  (Schleithal) | N France | 5.8 | 0-30 | 6.9 | 22.8 | 6.9 | 35.6 | SFO-SFO | Y/ EFSA Journal 2016;14(4) |
| Silt loam\* | N France | 6.1 |  | 42.7 | 141.7 | 11.4 | 19 | SFO best fit | Y/ EFSA Journal 2016;14(4) |
| Loam\* | UK | 6.2 |  | 39.3 | 378.7 | 37.1 | 13 | SFO best fit | Y/ EFSA Journal 2016;14(4) |
| Sandy clay loam \* | N Germany | 7.0 |  | 20.3 | 67.6 | 10.1 | 9 | SFO best fit | Y/ EFSA Journal 2016;14(4) |
| Loam \* | Italy | 6.6 |  | 11.1 | 36.8 | 7.3 | 7 | SFO best fit | Y/ EFSA Journal 2016;14(4) |
| Geometric mean (if not pH dependent) | | | | | | **13.2** | | | |

\* Aitken, Doig & Just (2012) (metabolite dosed study, accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))

1. Medium for measurement of soil pH not stated
2. Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7.

#### Mesosulfuron-methyl and its metabolites

The field dissipation of mesosulfuron-methyl has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584), no additional studies are considered for this assessment.

Although field soil dissipation studies were rated acceptable for the first approval of the active substance mesosulfuron-methyl, some deviations were identified by the EU re-review and no reliable normalised field DegT50 could be derived based on updated risk assessment practices.

Environmental exposure simulations for risk assessments were in consequence agreed to be based on laboratory study information, cf. Section. 8.3.1.1 for tabular summaries of modelling endpoints. For conservative PECsoil calculations of parent and metabolites, it was agreed to apply worst case DT50 values of trigger kinetic evaluations, see summarised as well in Section. 8.3.1.1.

#### Mefenpyr-diethyl and its metabolites

The degradation of mefenpyr-diethyl under field conditions was investigated at four German sites at a nominal application rate of 90 g/ha in two studies.

Mefenpyr-diethyl was found to dissipate very rapidly at three out of the four sites investigated. After application, significant concentrations of the parent compound were found only at site “Stelle”. The field dissipation data were kinetically evaluated. It was concluded that too few data points with significant concentrations exist to estimate reliable degradation parameters of mefenpyr-diethyl and of AE F113225. Hence, no reliable field DT50 values of mefenpyr-diethyl and of AE F113225 are available. For three sites a sufficient number of data points were available with significant AE F094270 concentrations. First order degradation rates were calculated for all sites based on non-normalized data in the original studies.

The optimised degradation rates and half-lives of the phenylpyrazole carboxylic acid AE F094270 for Bornheim, Gersthofen and Schwanheim test-sites are summarised in the table below. All fits followed simple first order kinetics with acceptable visual fits.

Table 8.4‑3: Kinetic parameters and field DT50 for metabolite AE F094270

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Location** | **Model** | **DT50 actual (days)** | **DT90 actual (days)** | **Chi²**  **(%)** | **t-test** | **DT50 normalized (days)** |
| Bornheim (DE) | SFO | 44 | 147 | 5.8 | < 0.001 | 13.4 |
| Gersthofen (DE) | SFO | 23 | 76 | 9.0 | 0.014 | 12.8 |
| Schwanheim (DE) | SFO | 79 | 263 | 9.0 | 0.0076 | 43.8 |
| **Geometric mean** | | | | | | **19.6** |

### Soil accumulation testing (KCP 9.1.1.2.2)

#### Iodosulfuron-methyl-sodium and its metabolites

The accumulation of **iodosulfuron-methyl-sodium** has been evaluated, full details are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453). No accumulation studies have been performed or are required. As shown in various laboratory and field degradation experiments no accumulation of iodosulfuron-methyl-sodium nor most of its metabolites is expected. For metabolite AE F059411 calculations show that accumulation can be considered negligible.

#### Mesosulfuron-methyl and its metabolites

The accumulation of **mesosulfuron-methyl** has been evaluated, full details are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584). No accumulation studies have been performed or are required.

#### Mefenpyr-diethyl and its metabolites

There was no need for a testing of soil accumulation as the times for a 90% degradation of all mefenpyr-diethyl residues under conditions of the field were well below 1 year. There is no potential indicated for an accumulation of residues of the parent compound and/or its major metabolites in soil following repeated application in following years.

## Mobility in soil (KCP 9.1.2)

Studies on mobility in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.

### Laboratory studies (KCP 9.1.2.1)

#### Iodosulfuron-methyl-sodium and its metabolites

The plant uptake factor (PUF) of AE F075736 has been evaluated, full details are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453). Additionally, the PUF of AE F075736 has been evaluated and accepted during the peer review of the active substance metsulfuron-methyl (EFSA Journal 2015;13(1):3936). The PUF for AE F075736 in wheat was agreed as 0.50. No additional studies are considered for this assessment.

The soil adsorption/desorption of iodosulfuron-methyl-sodium and its metabolites has been evaluated, full details are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453). No additional studies are considered for this assessment.

Column leaching studies for iodosulfuron-methyl-sodium were not required for EU registration; no additional studies are considered for this assessment.

**Table 8.5‑1: Summary of soil adsorption/desorption for iodosulfuron-methyl-sodium**

| **Iodosulfuron-methyl-sodium** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type** | **OC**  **(%)** | **pH**  **(-)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
| S 2.1 | Sand | 1.2 | 5.6 a) | 0.12 | 10 | 0.70 | Y/ EFSA Journal 2016;14(4) |
| LS 2.2 | Loamy sand | 2.5 | 5.7 a) | 0.54 | 22 | 0.93 | Y/ EFSA Journal 2016;14(4) |
| SL V | Sandy loam | 1.1 | 6.0 a) | 0.13 | 12 | 1.03 | Y/ EFSA Journal 2016;14(4) |
| SL 2 | Silt loam | 0.7 | 5.4 a) | 1.05 | 152 | 0.87 | Y/ EFSA Journal 2016;14(4) |
| CLM | Clay loam | 2.8 | 7.2 a) | 2.47 | 90 | 0.80 | Y/ EFSA Journal 2016;14(4) |
| SLJ | Sandy loam | 2.5 | 7.5 a) | 2.03 | 82 | 0.85 | Y/ EFSA Journal 2016;14(4) |
| FL | Loam | 3.0 | 7.3 a) | 0.694 | 22.8 | 0.89 | Y/ EFSA Journal 2016;14(4) |
| FB | Clay loam | 2.4 | 7.2 a) | 0.368 | 15.5 | 0.86 | Y/ EFSA Journal 2016;14(4) |
| Honville | Loamy silt | 0.9 | 5.9 b) | 0.451 | 49.5 | 0.92 | Y/ EFSA Journal 2016;14(4) |
|  | Geometric mean (n=9) | | | | **33.4** | - |  |
|  | Arithmetic mean (n=9) | | | | 50.6 | 0.87 |  |
|  | pH-dependency y/n | | | | No |  |  |

1. Medium for the measurement of soil pH not stated.
2. In CaCl2.

**Table 8.5‑2: Summary of soil adsorption/desorption for AE F075736**

| **AE F075736** | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil Name** | **Soil Type** | | **OC**  **(%)** | | **pH**  **(-)** | **Kf (mL/g)** | | **Kfoc**  **(mL/g)** | | **1/n**  **(-)** | | **Evaluated on EU level y/n/ Reference** |
| FL | Loam | | 3.0 | | 7.3 a) | 0.134 | | 4.3 | | 0.94 | | Y/ EFSA Journal 2016;14(4) |
| FB | Clay loam | | 2.4 | | 7.2 a) | 0.067 | | 2.9 | | 0.89 | | Y/ EFSA Journal 2016;14(4) |
| SL S | Silt loam | | 2.1 | | 7.0 a) | 0.106 | | 5.1 | | 0.86 | | Y/ EFSA Journal 2016;14(4) |
| LS 2.2 | | Loamy sand | | 2.0 | 6.0 a) | | 0.145 | | 7.4 | | 0.92 | Y/ EFSA Journal 2016;14(4) |
| SL V | | Sandy loam | | 0.4 | 6.0 a) | | 0.065 | | 15.1 | | 0.90 | Y/ EFSA Journal 2016;14(4) |
| LUFA 2.2 | | Loamy sand | | 2.2 | 5.8 a) | | 0.530 | | 24.2 | | 0.91 | Y/ EFSA Journal 2016;14(4) |
| Honville | | Loamy silt | | 0.9 | 6.7 a) | | 0.241 | | 26.5 | | 0.96 | Y/ EFSA Journal 2016;14(4) |
| Flanagan b) | | Silt loam | | 2.3 | 6.5 a) | | 1.4 | | 60 | | 0.97 | Y/ EFSA Journal 2016;14(4) |
| Keyport (USA) b) | | Silt loam | | 1.6 | 6.4 a) | | 0.84 | | 53 | | 0.85 | Y/ EFSA Journal 2016;14(4) |
| Cecil (USA) b) | | Sand | | 0.2 | 6.1 a) | | 0.36 | | 207 | | 1.14 | Y/ EFSA Journal 2016;14(4) |
| Bow Island (Canada) c) | | Sandy loam | | 1.3 | 7.1 a) | | 0.05 | | 4 | | 0.97 | Y/ EFSA Journal 2016;14(4) |
| Tangent (Canada) c) | | Clay loam | | 2.6 | 5.3 a) | | 0.3 | | 12 | | 0.95 | Y/ EFSA Journal 2016;14(4) |
| Dauphin (Canada) c) | | Sandy clay loam | | 3.4 | 7.5 a) | | 0.3 | | 9 | | 0.95 | Y/ EFSA Journal 2016;14(4) |
| Bradwell (Canada) c) | | Loam | | 2.1 | 7.6 a) | | 0.15 | | 7 | | 1.1 | Y/ EFSA Journal 2016;14(4) |
| Hanley Res. (Canada) c) | | Loam | | 2.3 | 5.4 a) | | 0.65 | | 29 | | 1.03 | Y/ EFSA Journal 2016;14(4) |
| Foam Lake (Canada) c) | | Sandy loam | | 3 | 7.7 a) | | 0.35 | | 12 | | 1.06 | Y/ EFSA Journal 2016;14(4) |
| Fisher Branch (Canada) c) | | Clay loam | | 4.2 | 7.5 a) | | 0.6 | | 14 | | 0.94 | Y/ EFSA Journal 2016;14(4) |
| Drummer (USA) d) | | Silt loam | | 3.2 | 6.4 a) | | 1.5 | | 47 | | 0.85 | Y/ EFSA Journal 2016;14(4) |
| Lleida (Spain) d) | | Silty clay | | 1.8 | 7.9 a) | | 0.13 | | 6.9 | | 0.95 | Y/ EFSA Journal 2016;14(4) |
| Gross-Umstadt (Germany) d) | | Loam | | 1.3 | 7.2 a) | | 0.1 | | 7.8 | | 0.95 | Y/ EFSA Journal 2016;14(4) |
| Sassafras (USA) d) | | Sand | | 1.4 | 5.3 a) | | 0.48 | | 35 | | 0.9 | Y/ EFSA Journal 2016;14(4) |
| Nambsheim (France) d) | | Sandy loam | | 1.3 | 7.1 a) | | 0.05 | | 4 | | 0.97 | Y/ EFSA Journal 2016;14(4) |
| Geometric mean (n=22) | | | | | | | | | **14.0** | | - |  |
| Arithmetic mean (n=22) | | | | | | | | | **27.0** | | 1.0 |  |
| pH-dependency y/n | | | | | | | | | No | | | |

1. Medium for the measurement of soil pH not stated
2. Friedman (1981) (accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
3. Yang (1987) (accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
4. Allan (2011) (accepted in the RAR for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))

**Table 8.5‑3: Summary of soil adsorption/desorption for AE F145740**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F145740** | | | | | | | |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
| Laacher Hof AXXa | Sandy loam | 2.0 | 6.5 | 0.27 | 13.5 | 0.91 | Y/ EFSA Journal 2016;14(4) |
| Dollendorf II | Silty clay loam | 4.9 | 7.4 | 0.61 | 12.5 | 0.91 | Y/ EFSA Journal 2016;14(4) |
| Höfchen am Hohenseh 4a | Silt loam | 2.1 | 6.5 | 0.39 | 18.7 | 0.90 | Y/ EFSA Journal 2016;14(4) |
| Hanscheider Hof | Sandy loam | 2.9 | 5.4 | 0.95 | 32.6 | 0.95 | Y/ EFSA Journal 2016;14(4) |
| Geometric mean (n=4) | | | | | **17.9** | - |  |
| Arithmetic mean (n=4) | | | | | **19.3** | 0.92 |  |
| pH-dependency y/n | | | | | No |  |  |

**Table 8.5‑4: Summary of soil adsorption/desorption for AE F161778**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE F161778** | | | | | |  |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(-)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on**  **EU level y/n/ Reference** |
| Hattersheim | Silty loam | 1.9 | 6.4 a) | 0.754 | 39.7 | 0.96 | Y/ EFSA Journal 2016;14(4) |
| Baumber | Loamy sand | 2.2 | 7.3 a) | 0.753 | 34.2 | 0.98 | Y/ EFSA Journal 2016;14(4) |
| Empingham | Sandy clayey loam | 4.6 | 7.4 a) | 0.940 | 20.4 | 0.94 | Y/ EFSA Journal 2016;14(4) |
| Gross-Umstadt (Germany) c) | Silt loam | 1.2 | 7.7 b) | 0.4 | 34 | 1.08 | Y/ EFSA Journal 2016;14(4) |
| Arrow (UK) c) | Sandy loam | 2.3 | 5.7 b) | 0.6 | 24.2 | 0.92 | Y/ EFSA Journal 2016;14(4) |
|  |  |  |  |  |  |  |  |
| Mattapex (USA) c) | Silt loam | 2.6 | 6.4 b) | 0.8 | 30.4 | 0.84 | Y/ EFSA Journal 2016;14(4) |
| Geometric mean (n=6) | | | | | **29.7** | - |  |
| Arithmetic mean (n=6) | | | | | **30.5** | 1.0 |  |
| pH-dependency y/n | | | | | No |  |  |

1. In CaCl2
2. Medium for the measurement of soil pH not stated
3. Yeomans (1999c) (accepted in the RARs for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))

**Table 8.5‑5: Summary of soil adsorption/desorption for BCS-CW81253**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **BCS-CW81253** | | | |  |  |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on**  **EU level y/n/**  **Reference** |
| Laacher Hof AXXa | Loamy sand | 1.6 | 6.4 a) | 0.73 | 45.4 | 0.91 | Y/ EFSA Journal 2016;14(4) |
| Dollendorf II | Clay loam | 5.0 | 7.2 a) | 0.99 | 19.9 | 0.89 | Y/ EFSA Journal 2016;14(4) |
| Höfchen am Hohenseh 4a | Silt loam | 1.7 | 6.3 a) | 0.77 | 45.2 | 0.90 | Y/ EFSA Journal 2016;14(4) |
| Hanscheider Hof | Sandy loam | 2.9 | 5.4 a) | 1.06 | 36.5 | 0.89 | Y/ EFSA Journal 2016;14(4) |
| Gross-Umstadt (Germany) c) | Silt loam | 1.2 | 7.7 | 0.97 (Kd) | 81 | 1.0 | Y/ EFSA Journal 2016;14(4) |
| Arrow (UK) c) | Sandy loam | 2.3 | 5.7 | 0.9 | 41 | 0.86 | Y/ EFSA Journal 2016;14(4) |
| Mattapex (USA) c) | Silt loam | 2.6 | 6.4 | 1.2 | 45 | 0.92 | Y/ EFSA Journal 2016;14(4) |
|  |  | Geometric mean (n=7) | | | **41.7** | - |  |
|  |  | Arithmetic mean (n=7) | | | **44.9** | 0.91 |  |
|  |  | pH-dependency y/n | | | No |  |  |

1. In CaCl2
2. Medium for the measurement of soil pH not stated
3. Yeomans (1999c) (accepted in the RARs for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))

**Table 8.5‑6: Summary of soil adsorption/desorption for AE 0000119**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **AE 0000119** | | | | | | | |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
| Wurmwiese | Loam | 1.8 | 5.3 | 1.103 | 61.3 | 0.93 | Y/ EFSA Journal 2016;14(4) |
| Höfchen am Hohenseh 4a | Silt loam | 2.4 | 6.6 | 1.702 | 70.9 | 0.91 | Y/ EFSA Journal 2016;14(4) |
| Guadalupe | Sandy loam | 0.7 | 6.7 | 1.772 | 253.2 | 0.92 | Y/ EFSA Journal 2016;14(4) |
| Springfield | Silt loam | 1.7 | 6.6 | 5.985 | 352.0 | 0.89 | Y/ EFSA Journal 2016;14(4) |
| Tama, (USA) a) | Silty clay loam | 3.1 | 6.3 | 5.97 | 194 | 0.9297 | Y/ EFSA Journal 2016;14(4) |
| Sassafras (USA) a) | Sand | 1.4 | 6.3 | 0.969 | 69.4 | 0.9021 | Y/ EFSA Journal 2016;14(4) |
| Lleida (Spain) a) | Silty clay | 1.8 | 7.5 | 1.51 | 84.0 | 0.9364 | Y/ EFSA Journal 2016;14(4) |
| Nambsheim  (France) a) | Sandy loam | 1.6 | 7.0 | 0.908 | 57.9 | 0.9290 | Y/ EFSA Journal 2016;14(4) |
| Suchozebry (Poland) a) | Sandy loam | 0.76 | 5.0 | 1.24 | 164 | 0.8686 | Y/ EFSA Journal 2016;14(4) |
| Geometric mean (n=9) | | | | | **117.2** | - |  |
| Arithmetic mean (n=9) | | | | | **145.2** | 0.91 |  |
| pH-dependency y/n | | | | | No | | |

a) Elliott, T. (2009) (accepted in the RARs for metsulfuron-methyl and thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))

**Table 8.5‑7: Summary of soil adsorption/desorption for AE F059411**

|  | **AE F059411** | | | | | | |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(-)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
| SL S | Silt loam | 2.1 | 7.0 a) | 0.443 | 21.3 | | 0.87 | Y/ EFSA Journal 2016;14(4) |
| LS 2.2 | Loamy sand | 2.0 | 6.0 a) | 0.298 | 15.3 | | 0.91 | Y/ EFSA Journal 2016;14(4) |
| SL V | Sandy loam | 0.4 | 6.0 a) | 0.315 | 73.3 | | 0.84 | Y/ EFSA Journal 2016;14(4) |
| Honville | Loamy silt | 0.9 | 6.7 a) | 1.57 | 172.0 | | 0.84 | Y/ EFSA Journal 2016;14(4) |
| Laacher Hof Wurmwiese | Loam | 1.8 | 5.3 b) | 1.321 | 73.4 | | 0.92 | Y/ EFSA Journal 2016;14(4) |
| Hoefchen am Hohenseh 4a | Silt loam | 2.4 | 6.6 b) | 0.481 | 20.0 | 0.98 | | Y/ EFSA Journal 2016;14(4) |
| Les Cayades | Clay loam | 0.9 | 7.6 b) | 0.561 | 62.3 | 0.92 | | Y/ EFSA Journal 2016;14(4) |
| Guadalupe | Sandy loam | 0.7 | 6.7 b) | 0.675 | 96.5 | 0.95 | | Y/ EFSA Journal 2016;14(4) |
| Springfield | Silt loam | 1.7 | 6.6 b) | 3.147 | 185.1 | 0.90 | | Y/ EFSA Journal 2016;14(4) |
| Gross-Umstadt d) | Silt loam | 1.2 | 7.7 a) | 0.2 | 18.8 | 1.05 | | Y/ EFSA Journal 2016;14(4) |
| Arrow d) | Sandy loam | 2.3 | 5.7 a) | 0.7 | 29.7 | 0.94 | | Y/ EFSA Journal 2016;14(4) |
| Mattapex d) | Silt loam | 2.6 | 6.4 a) | 0.4 | 16.7 | 0.96 | | Y/ EFSA Journal 2016;14(4) |
| Matapeake e) | Silt loam | 1.1 | 5.3 a) | 2.36 | 214.2 | 0.841 | | Y/ EFSA Journal 2016;14(4) |
| Sassafras e) | Sand | 0.46 | 6.3 a) | 0.621 | 133.8 | 0.784 | | Y/ EFSA Journal 2016;14(4) |
| Drummer e) | Silty clay loam | 3.02 | 5.7 a) | 6.8 | 225.5 | 0.841 | | Y/ EFSA Journal 2016;14(4) |
| Myaka e) | Sand | 0.58 | 6.2 a) | 0.264 | 45.52 | 0.873 | | Y/ EFSA Journal 2016;14(4) |
| Agriculutural sand f) | Sand | 0.35 | 7.9 a) | 0.2326 | 66.5 | 0.87 | | Y/ EFSA Journal 2016;14(4) |
| Sandy loam f) | Sandy loam | 0.99 | 7.8 a) | 0.57 | 58.2 | 0.902 | | Y/ EFSA Journal 2016;14(4) |
| Silt loam f) | Silt loam | 1.74 | 6.5 a) | 0.9612 | 55.2 | 0.847 | | Y/ EFSA Journal 2016;14(4) |
| Silty clay loam f) | Silty clay loam | 0.7 | 6.9 a) | 1.201 | 171.6 | 0.823 | | Y/ EFSA Journal 2016;14(4) |
| 2.2 g) | Silty sand | 1.97 | 5.4 a) | 0.3728 | 18.92 | 0.64 | | Y/ EFSA Journal 2016;14(4) |
| 3A g) | Sandy loam | 2.42 | 7.3 a) | 0.435 | 17.97 | 0.759 | | Y/ EFSA Journal 2016;14(4) |
| 6S g) | Clay loam | 1.84 | 6.9 a) | 0.0543 | 2.95 | 1.422 | | Y/ EFSA Journal 2016;14(4) |
| Speyer 2.1 h) | - | 0.56 | 6.0 c) | 0.2025 | 36 | 0.92 | | Y/ EFSA Journal 2016;14(4) |
| Standard soil no. 115 h) | - | 1.7 | 7.4 c) | 0.6255 | 37 | 0.89 | | Y/ EFSA Journal 2016;14(4) |
| Standard soil no. 164 h) | - | 3 | 6.5 c) | 0.645 | 22 | 0.92 | | Y/ EFSA Journal 2016;14(4) |
| Standard soil no. 243 h) | - | 1.1 | 4.3 c) | 0.337 | 31 | 0.91 | | Y/ EFSA Journal 2016;14(4) |
| Geometric mean (n=27) | | | | | **45.6** | - | |  |
| Arithmetic mean (n=27) | | | | | **71.1** | 0.90 | |  |
|  |  |  | pH-dependency y/n | | No |  | |  |

1. Medium for the measurement of soil pH not stated.
2. In CaCl2.
3. In Ca/KCl2
4. Yeomans & Swales (2000) (accepted in the RARs for metsulfuron-methyl, triasulfuron, prosulfuron and thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
5. Li & McFetridge (1996) (accepted in the RARs for chlorsulfuron, metsulfuron-methyl, triasulfuron, prosulfuron and thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
6. Kersterson (1990) (accepted in the RARs for metsulfuron-methyl, triasulfuron, prosulfuron and thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
7. Morlock (2006) (accepted in the RARs for metsulfuron-methyl and thifensulfuron methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))
8. Van Noorloos & Slangen (2001) (accepted in the RARs for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance thifensulfuron methyl, EFSA (2015))

#### Mesosulfuron-methyl and its metabolites

The soil adsorption/desorption of mesosulfuron-methyl and its metabolites has been evaluated, full details are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584); no additional studies are considered for this assessment.

Column leaching studies for mesosulfuron-methyl were not required for EU registration; no additional studies are considered for this assessment.

**Table 8.5‑8: Summary of soil adsorption/desorption for mesosulfuron-methyl**

|  | **Mesosulfuron-methyl** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
| Hamlet Sand (EFS-8) | Hamlet Sand  (EFS-8) | 0.49 | 5.0 | 1.69 | 345 | 0.85 | Y/ EFSA Journal 2016;14(10) |
| Sandy Clay Loam (EFS-15) | Sandy Clay  Loam (EFS-  15) | 2.70 | 7.4 | 3.71 | 137 | 0.93 | Y/ EFSA Journal 2016;14(10) |
| Loamy Sand (EFS-17) | Loamy  Sand (EFS-  17) | 1.13 | 5.2 | 0.41 | 37 | 0.93 | Y/ EFSA Journal 2016;14(10) |
| Loamy Sand  (EFS-18) | Loamy  Sand (EFS18) | 2.34 | 5.2 | 0.71 | 31 | 0.91 | Y/ EFSA Journal  2016;14(10) |
| Sandy Loam (EFS-19) | Sandy  Loam (EFS-  19) | 2.64 | 7.3 | 2.28 | 86 | 0.90 | Y/ EFSA Journal 2016;14(10) |
| Sandy Loam (EFS-20) | Sandy  Loam (EFS-  20) | 0.91 | 6.3 | 0.24 | 26 | 0.92 | Y/ EFSA Journal 2016;14(10) |
| Clay Loam (EFS28) | Clay Loam (EFS-28) | 1.68 | 7.5 | 0.60 | 36 | 0.93 | Y/ EFSA Journal 2016;14(10) |
| Loam (EFS-29) | Loam (EFS-  29) | 1.43 | 7.5 | 1.22 | 85 | 0.90 | Y/ EFSA Journal 2016;14(10) |
| Silt Loam (EFS30) | Silt Loam (EFS-30) | 1.16 | 7.3 | 0.56 | 48 | 0.93 | Y/ EFSA Journal 2016;14(10) |
|  |  |  | Geometric mean (n=9) | | **64** | **-** |  |
|  |  |  | Arithmetic mean (n=9) | | 92 | **0.91** |  |
|  |  |  | pH-dependency y/n | | No |  |  |

**Table 8.5‑9: Summary of soil adsorption/desorption for metabolite AE F154851**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **AE F154851** | | | |  |  |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
| clay loam | clay loam | 3.15 | 5.8 | 3.1 | 98 | 0.92 | Y/ EFSA Journal 2016;14(10) |
| silt loam | silt loam | 1.3 | 7.4 | 0.79 | 61 | 0.94 | Y/ EFSA Journal 2016;14(10) |
| sandy loam | sandy loam | 1.65 | 5.1 | 0.75 | 46 | 0.95 | Y/ EFSA Journal 2016;14(10) |
|  |  | Geometric mean (n=3) | | | **65** | - |  |
|  |  | Arithmetic mean (n=3) | | | 68 | **0.94** |  |
|  |  | pH-dependency y/n | | | No |  |  |

**Table 8.5‑10: Summary of soil adsorption/desorption for metabolite AE F099095**

| **AE F099095** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on**  **EU level y/n/ Reference** |
| clay loam | clay loam | 3.15 | 5.8 | 42.8 | 1360 | 0.83 | Y/ EFSA Journal 2016;14(10) |
| silt loam | silt loam | 1.3 | 7.4 | 2.94 | 226 | 0.84 | Y/ EFSA Journal 2016;14(10) |
| sandy loam | sandy loam | 1.65 | 5.1 | 2.33 | 141 | 0.86 | Y/ EFSA Journal 2016;14(10) |
| sandy loam c) | sandy loam | 1.3 | 5.7 | 3.05 | 235 | 0.777 | Y/ EFSA Journal 2016;14(10) |
| sandy loam a) | sandy loam | 4.3 | 5.3 | 4.81 | 112 | 0.737 | Y/ EFSA Journal 2016;14(10) |
| sandy clay loam a) | sandy clay loam | 3.5 | 7.0 | 4.39 | 126 | 0.78 | Y/ EFSA Journal 2016;14(10) |
| clay a) | clay | 3.8 | 7.1 | 4.94 | 130 | 0.79 | Y/ EFSA Journal 2016;14(10) |
| sand a) | sand | 1.1 | 3.9 | 2.05 | 186 | 0.801 | Y/ EFSA Journal 2016;14(10) |
| loamy sand b) | loamy sand | 14.42 | 3.38 | 126 | 874 | 0.817 | Y/ EFSA Journal 2016;14(10) |
| clay b) | clay | 0.89 | 7.55 | 33 | 3704 | 0.761 | Y/ EFSA Journal 2016;14(10) |
| silt loam b) | silt loam | 2.13 | 5.16 | 11 | 516 | 0.802 | Y/ EFSA Journal 2016;14(10) |
|  |  | Geometric mean (n=11) | | | **334** | - |  |
|  |  | Arithmetic mean (n=11) | | | 692 | **0.80** |  |
|  |  | pH-dependency y/n | | | No | | |

1. Sadgrove, 2014, (accepted in the RARs for flazasulfuron; refer to the EFSA conclusion on the peer review of the active flazasulfuron, EFSA Journal 2016; 14(8): 4575)
2. Refer to the EFSA conlcusion on the peer review of the active substance orthosulfamuron, EFSA Journal 2014;12(3):3353)

**Table 8.5‑11: Summary of soil adsorption/desorption for metabolite AE F092944**

|  | **AE F092944** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(-)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on**  **EU level y/n/ Reference** |
| Loamy sand | Loamy sand | 1.17 | 5.00 a) | 2.47 | 211 | 0.69 | Y/ EFSA Journal 2016;14(10) |
| Loamy sand | Loamy sand | 2.91 | 5.00 a) | 2.59 | 89 | 0.86 | Y/ EFSA Journal 2016;14(10) |
| Sandy loam | Sandy loam | 1.32 | 4.70 a) | 8.25 | 625 | 0.65 | Y/ EFSA Journal 2016;14(10) |
| Loamy sand | Loamy sand | 0.16 | 8.00 a) | 1.05 \* | 663 \* | 0.52 \* | Y/ EFSA Journal 2016;14(10) |
| Sandy loam | Sandy loam | 0.26 | 7.95 a) | 1.82 \* | 696 \* | 0.63 \* | Y/ EFSA Journal 2016;14(10) |
| Sandy loam | Sandy loam | 1.04 | 6.10 a) | 4.11 | 395 | 0.78 | Y/ EFSA Journal 2016;14(10) |
| Silt loam | Silt loam | 0.72 | 5.60 a) | 81.3 | 11289 | 0.58 | Y/ EFSA Journal 2016;14(10) |
| Silty clay | Silty clay | 1.80 | 7.70 a) | 16.5 | 917 | 0.62 | Y/ EFSA Journal 2016;14(10) |
| Loamy sand c) | Loamy sand c) | 2.1 | 6.4 b) | 1.22 | 58.1 | 0.85 | Y/ EFSA Journal 2016;14(10) |
| Loamy sand c) | Loamy sand c) | 0.5 | 5.2 b) | 2.26 | 452 | 0.81 | Y/ EFSA Journal 2016;14(10) |
| Silt loam c) | Silt loam c) | 3.1 | 5.5 b) | 45.3 | 1460 | 0.71 | Y/ EFSA Journal 2016;14(10) |
| Sandy loam c) | Sandy loam | 0.7 | 7.8 b) | 0.859 | 123 | 0.79 | Y/ EFSA Journal 2016;14(10) |
| Silt loam c) | Silt loam | 1.2 | 5.8 b) | 2.35 | 196 | 0.82 | Y/ EFSA Journal 2016;14(10) |
| Loamy sand d) | Loamy sand | 2.29 | 7.0 b) | 1.17 | 50.9 | 0.84 | Y/ EFSA Journal 2016;14(10) |
| Loamy sand d) | Loamy sand | 1.17 | 7.7 b) | 0.71 | 60.4 | 0.82 | Y/ EFSA Journal 2016;14(10) |
| Sisseln, sandy loam  d) | Sandy loam | 1.557 | 7.8 b) | 0.83 | 52.8 | 0.92 | Y/ EFSA Journal 2016;14(10) |
| Silt loam d) | Silt loam | 4.05 | 7.3 b) | 1.70 | 42.0 | 0.91 | Y/ EFSA Journal 2016;14(10) |
| Silt loam e) | Silt loam | 1.78 | 6.9 b) | 11.54 | 648.3 | 0.72 | Y/ EFSA Journal 2016;14(10) |
| Sandy loam e) | Sandy loam | 0.58 | 8.0 b) | 1.92 | 331.0 | 0.68 | Y/ EFSA Journal 2016;14(10) |
| Loamy sand e) | Loamy sand | 1.15 | 6.8 b) | 2.59 | 225.2 | 0.79 | Y/ EFSA Journal 2016;14(10) |
| Silty clay loam e) | Silty clay loam | 2.0 | 5.8 b) | 32.23 | 1611.5 | 0.56 | Y/ EFSA Journal 2016;14(10) |
| Sandy loam f) | Sandy loam | 1.1 | 4.9 a) | 13.77 | 1252.0 | 0.632 | Y/ EFSA Journal 2016;14(10) |
| Sandy loam f) | Sandy loam | 1.4 | 6.2 a) | 5.53 | 395.0 | 0.695 | Y/ EFSA Journal 2016;14(10) |
| Sandy clay loam f) | Sandy clay loam | 3.3 | 7.6 a) | 3.7 | 112.0 | 0.754 | Y/ EFSA Journal 2016;14(10) |
| Slay loam f) | Slay loam | 4.0 | 4.9 a) | 17.99 | 450.0 | 0.429 | Y/ EFSA Journal 2016;14(10) |
| Geometric mean (n=23) | | | | | **293.9** |  |  |
|  |  | Arithmetic mean (n=23) | | | 956.4 | **0.74** |  |
|  |  | pH-dependency y/n | | | No |  |  |

\* Value excluded from the mean calculation a) Measured in calcium chloride solution

1. Measured in water
2. Aikens, P.J.; 2001 (accepted in the RARs for flupyrsulfuron-methyl, bensulfuron and azimsulfuron; refer to the EFSA conclusion on the peer review of the active substance flupyrsulfuron-methyl, EFSA Journal 2014;12(11):3881)
3. Voelkel, W. 1995 (accepted in the RAR for nicosulfuron; refer to the EFSA conclusion on the peer review of the active substance nicosulfuron, EFSA Journal 2008;6(1):120r)
4. Nadeau, R.G., Sidhu, R.S., 1996 (accepted in the RARs for sulfosulfuron and halosulfuron; refer to the EFSA conclusion on the peer review of the active sulfosulfuron, EFSA Journal 2014;12(7):3764)
5. Hiler T, 2006 (accepted in the RARs for flazasulfuron; refer to the EFSA conclusion on the peer review of the active flazasulfuron, EFSA Journal 2016; 14(8): 4575)

**Table 8.5‑12: Summary of soil adsorption/desorption for metabolite AE F160459**

|  |  | **AE F160459** | | | |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on**  **EU level y/n/ Reference** |
| Loam | Loam | 1.8 | 5.3 | 0.1978 | 11.2 | 0.9320 | Y/ EFSA Journal 2016;14(10) |
| Silt loam | Silt loam | 2.4 | 6.6 | 0.3797 | 15.7 | 0.9388 | Y/ EFSA Journal 2016;14(10) |
| Clay loam | Clay loam | 7.42 | 7.3 | 0.7630 | 16.2 | 0.9267 | Y/ EFSA Journal 2016;14(10) |
| Sandy loam | Sandy loam | 0.7 | 6.7 | 0.1475 | 21.1 | 0.9760 | Y/ EFSA Journal 2016;14(10) |
| Silt loam | Silt loam | 1.7 | 6.6 | 0.7590 | 44.6 | 0.9324 | Y/ EFSA Journal 2016;14(10) |
|  |  | Geometric mean (n=5) | | | **19.3** |  |  |
|  |  | Arithmetic mean (n=5) | | | 21.8 | **0.941** |  |
|  |  | pH-dependency y/n | | | No |  |  |

**Table 8.5‑13: Summary of soil adsorption/desorption for metabolite AE F160460**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **AE F160460** | |  |  |  |  |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on**  **EU level y/n/ Reference** |
| Loam | Loam | 1.8 | 5.3 | 0.2069 | 11.5 | 0.9745 | Y/ EFSA Journal 2016;14(10) |
| Silt loam | Silt loam | 2.4 | 6.6 | 0.2258 | 9.4 | 0.8692 | Y/ EFSA Journal 2016;14(10) |
| Clay loam | Clay loam | 7.42 | 7.3 | 0.3488 | 7.6 | 0.8387 | Y/ EFSA Journal 2016;14(10) |
| Sandy loam | Sandy loam | 0.7 | 6.7 | 0.0743 | 10.6 | 0.9524 | Y/ EFSA Journal 2016;14(10) |
| Silt loam | Silt loam | 1.7 | 6.6 | 0.5329 | 31.3 | 0.8628 | Y/ EFSA Journal 2016;14(10) |
|  |  | Geometric mean (n=5) | | | **12.2** |  |  |
|  |  | Arithmetic mean (n=5) | | | 14.1 | **0.900** |  |
|  |  | pH-dependency y/n | | | No |  |  |

**Table 8.5‑14: Summary of soil adsorption/desorption for metabolite AE F140584**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **AE F140584** | | |  |  |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(-)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
|  |  |  | Geometric mean (n=-)\* | | **0** |  | Y/ EFSA Journal 2016;14(10) |
|  |  |  | Arithmetic mean (n=-)\* | | 0 | **1** |  |
|  |  |  | pH-dependency y/n | | No |  |  |

\* worst case assumption in absence of experimental study

**Table 8.5‑15: Summary of soil adsorption/desorption for metabolite AE F147447**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE F147447** | | | | | | |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kd (mL/g)** | **Kdoc (mL/g)** | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
| Sandy loam | Sandy loam | 2.1 | 6.4 | 0.097 | 4.6 | - | Y/ EFSA Journal 2016;14(10) |
| Silt loam | Silt loam | 2.5 | 6.8 | 0.096 | 3.8 | - | Y/ EFSA Journal 2016;14(10) |
| Loam | Loam | 1.3 | 6.8 | 0.086 | 6.6 | - | Y/ EFSA Journal 2016;14(10) |
| Silt loam | Silt loam | 2.8 | 5.6 | 0.196 | 7.0 | - | Y/ EFSA Journal 2016;14(10) |
| Clay loam | Clay loam | 4.4 | 7.3 | 0.181 | 4.1 | - | Y/ EFSA Journal 2016;14(10) |
|  |  |  | Geometric mean (n=5) | | **5.1** | - |  |
|  |  |  | Arithmetic mean (n=5) | | 5.2 | - |  |
|  |  |  | pH-dependency y/n | | No |  |  |

**Table 8.5‑16: Summary of soil adsorption/desorption for metabolite BCS-CV14885**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **BCS-CV14885** | | |  |  |
| **Soil Name** | **Soil Type** | **OC**  **(%)** | **pH**  **(CaCl2)** | **Kf (mL/g)** | **Kfoc**  **(mL/g)** | **1/n**  **(-)** | **Evaluated on EU level y/n/ Reference** |
| Loamy sand | Loamy sand | 1.7 | 6.2 | 0.30 | 17.5 | 1.17 | Y/ EFSA Journal 2016;14(10) |
| Loam | Loam | 5.1 | 7.0 | 0.96 | 18.8 | 1.07 | Y/ EFSA Journal 2016;14(10) |
| Silt loam | Silt loam | 2.0 | 6.1 | 0.27 | 13.6 | 1.18 | Y/ EFSA Journal 2016;14(10) |
| Loam | loam | 1.9 | 5.3 | 0.41 | 21.7 | 1.43 | Y/ EFSA Journal 2016;14(10) |
|  |  |  | Geometric mean (n=4) | | **17.7** |  |  |
|  |  |  | Arithmetic mean (n=4) | | 17.8 | **1.21** |  |
|  |  |  | pH-dependency y/n | | No |  |  |

#### Mefenpyr-diethyl and its metabolites

Table 8.5‑17: Summary of soil adsorption/desorption for mefenpyr-diethyl

| Mefenpyr-diethyl | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | OC  (%) | pH  (CaCl2) | Kf  (mL/g) | Kfoc  (mL/g) | 1/n  (-) | Evaluated on EU level y/n/ Reference |
| SLH | Silt loam | 1.10 | 6.2 | 7.08 | 644 | 0.99 | Y  DAR Mefenpyr-diethyl Vol.3-B8 Sept. 2011 |
| SLV | Loamy sand | 1.13 | 5.8 | 6.71 | 593 | 1.20 |
| S 2.1 | Silty sand | 1.17 | 5.0 | 5.68 | 486 | 1.20 |
| SLN | Loamy sand | 0.89 | 7.1 | 5.16 | 580 | 1.20 |
| EFS-8 | Sand | 0.49 | 4.98 | 3.16 | 648 | 0.96 |
| EFS-15 | Sandy clay loam | 2.70 | 7.9 | 19.9 | 738 | 0.96 |
| Geometric mean (n=6) | | | | | **609.9** | **-** |  |
| Arithmetic mean (n=6) | | | | | 614.8 | **1.1** |  |
| pH-dependency y/n | | | | | No | | |

Table 8.5‑18: Summary of soil adsorption/desorption for metabolite AE F113225

| AE F113225 | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil Name | Soil Type | OC  (%) | pH  (CaCl2) | Kf  (mL/g) | Kfoc  (mL/g) | 1/n  (-) | Evaluated on EU level y/n/ Reference |
| Shelley field | Loam | 1.9 | 7.1 | 2.73 | 144 | 0.90 | Y  DAR Mefenpyr-diethyl Vol.3-B8 Sept. 2011 |
| Litte Shelford | Sandy loam | 2.4 | 7.3 | 1.83 | 76 | 0.93 |
| Manningtree | Loam | 3.0 | 5.2 | 3.60 | 120 | 0.93 |
| Geometric mean (n=3) | | | | | **109.5** | - |
| Arithmetic mean (n=3) | | | | | 113.3 | **0.92** |
| pH-dependency y/n | | | | | No | | |

Table 8.5‑19: Summary of soil adsorption/desorption for metabolite AE F094270

| AE F094270 | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil Name | Soil Type | OC  (%) | pH \* | Kf  (mL/g) | Kfoc  (mL/g) | 1/n  (-) | Evaluated on EU level y/n/ Reference |
| LS 2.2 | Loamy sand | 2.91 | 5.0 | 7.49 | 257 | 0.96 | Y  DAR Mefenpyr-diethyl Vol.3-B8 Sept. 2011 |
| L 2.3 | Sandy loam | 1.15 | 5.0 | 4.57 | 397 | 0.80 |
| SL H | Silt loam | 1.33 | 6.8 | 1.57 | 118 | 1.02 |
| F 821 | Sandy loam | 2.28 | 7.1 | 1.49 | 65 | 1.00 |
| S 2.1 | Loamy sand | 1.17 | 5.0 | 2.58 | 221 | 0.86 |
| Geometric mean (n=5) | | | | | **176.8** | - |
| Arithmetic mean (n=5) | | | | | 211.6 | **0.93** |
| pH-dependency y/n | | | | | No | | |

\* Method of measurement not reported

For soil photodegradate metabolite AE 2211046 a Koc estimate *via* QSAR (**1320 mL/g**) was proposed by RMS as modelling endpoints in the DAR (2011).

### Lysimeter studies (KCP 9.1.2.2)

#### Iodosulfuron-methyl-sodium and its metabolites

Lysimeter studies for iodosulfuron-methyl-sodium has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453). No additional studies are considered for this assessment.

The results of two lysimeter studies were only considered indicative. Even under realistic worst-case conditions for leaching, in one study an atypical leaching event has been established, and at factor 1.5 exaggerated maximum application rate, neither iodosulfuron-methyl-sodium nor its main soil metabolite AE F075736, or any other metabolite, leached at concentrations that pose a risk to ground water.

#### Mesosulfuron-methyl and its metabolites

Lysimeter studies for mesosulfuron-methyl have been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584; no additional studies are considered for this assessment.

Averaged yearly concentrations in leachates (μg/L), active substance and degradates where exceeding 0.1 μg/L:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study design** | **Compound** | **1st year** | **2nd year** | **3rd year** |
| spring application (April-May) of 15 g/ha pyrimidyl label a.s. in 2 consecutive years, silty sand soil, 2 replicate cores, yearly rainfall 874 – 1127 mm. Total duration 3 years | parent a.s. | not detected | not detected | not detected |
| BCS-CV14885 | 0.240 µg/L | 0.241 µg/L | 0.269 µg/L |
| autumn application (November) of 15 g/ha pyrimidyl label a.s. in 2 consecutive years, silty sand soil, 2 replicate cores, yearly rainfall 823 – 1160 mm. Total duration 3 years. | parent a.s. | (not analysed) | not detected | not detected |
| BCS-CV14885 | (not analysed) | 0.481 µg/L | 0.154 µg/L |

For metabolite BCS-CV14885 the average annual concentration of radioactivity in leachates was 0.2 μg/L (spring applications) and in the range of 0.15-0.48 μg/L (autumn applications). Therefore, metabolite BCS-CV14885 was included in the groundwater exposure assessment.

Since the component was not found formed to notable abundance in the standard aerobic soil metabolism studies, soil half-life information was generated separately in a metabolite-dosed test, cf. Section 8.3.

In the EU review, a kinetic formation fraction from mesosulfuron-methyl (kf/kdp) of 0.096 was agreed for BCS-CV14885.

#### Mefenpyr-diethyl and its metabolites

For mefenpyr-diethyl, the results of a lysimeter study showed a rapid degradation of 14C-labelled mefenpyr-diethyl and its residues with simultaneous formation of bound residues. There were no signs for a translocation of the parent substance or its residues into deeper layers of soil. Analysis of percolates showed no contamination of above 0.1 µg parent-equivalent/L for any component.

### Field leaching studies (KCP 9.1.2.3)

Field leaching studies for **iodosulfuron-methyl-sodium** were not required for EU registration as sufficient information can be derived from the existing studies; no additional studies are considered for this assessment.

Field leaching studies for **mesosulfuron-methyl** were not required for EU registration as sufficient information can be derived from the existing studies, no additional studies are considered for this assessment.

## Degradation in the water/sediment systems (KCP 9.2, KCP 9.2.1, KCP 9.2.2, KCP 9.2.3)

Studies on degradation in water/sediment systems with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.

### Iodosulfuron-methyl-sodium and its metabolites

The degradation of iodosulfuron-methyl-sodium in water/sediment systems has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453). No additional studies are considered for this assessment.

**Table 8.6‑1: Summary of degradation in water/sediment of iodosulfuron-methyl-sodium**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Iodosulfuron-methyl-sodium Distribution: mainly distributed to water phase** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/**  **sed.** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU**  **level y/n/ Reference** |
| Nidda | 8.3 / - | 20.4 | 68.0 | SFO | 19.0 | 63.3 | SFO | 21.2 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Rhine | 7.7 / - | 11.3 | 37.6 | SFO | 10.5 | 34.8 | SFO | 2.2 | FOMC | Y/ EFSA  Journal  2016;14(4) |
| Pikeville | 7.1 /  5.4 a) | 33.9 | 112.7 | SFO | 28.4 | 94.4 | SFO | - b) | SFO | Y/ EFSA  Journal  2016;14(4) |
| Geometric mean (n=3) | | **19.8** | 66.1 |  | 17.8 | 59.2 |  | 6.8 |  |  |

1. measured in CaCl2
2. no reliable value determinable

**Table 8.6‑2: Summary of degradation in water/sediment of AE F075736**

| **AE F075736 Distribution; max. 67.8% total system (43 d), 57% water (43 d), 15.9% sediment (14 d)** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Water/sediment system** | **pH**  **water/**  **sed.** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU**  **level y/n/**  **Reference** |
| Nidda | 8.3 / - | 68.4 | 227.4 | SFO | 169.4 | 562.9 | SFO | 134.9 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Rhine | 7.7 / - | 39.2 | 130.4 | SFO | 24.0 | 79.7 | SFO | 29.4 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Pikeville | 7.1 /  5.4 a) | 97.8 | 324.9 | SFO | - b) |  | SFO | - b) | SFO | Y/ EFSA  Journal  2016;14(4) |
| Birkenbach e) | 8 / 7.2 | 272.5 | 905.1 | SFO | 231.3 | 857.5 | DFOP | >1000 | FOMC | Y/ EFSA  Journal  2016;14(4) |
| Unter-  Widdersheim e) | 7.6 /  7.6 | 50.2 | 166 | SFO | 45.3 | 150.4 c) | SFO | 41.1 | SFO | Y/ EFSA  Journal  2016;14(4) |
| Pond f) | 7.7 /  7.3 | 305.5 c) | 1014 c) | SFO | 180.4 c) | 599.1 c) | SFO | >1000  c) | SFO | Y/ EFSA  Journal  2016;14(4) |
| Creek g) | 8.3 / - | 605.5 c) | 1973  c),d) | SFO/DFOP | 413.4 c) | 1373 c) | SFO | >1000  c) | SFO | Y/ EFSA  Journal  2016;14(4) |
| Geometric mean (n=7) | | **131.0** | 433.9 |  | 113.4 | 410.1 |  | - h) |  |  |

1. measured in CaCl2
2. no reliable value determinable
3. Extrapolated beyond the study period
4. Calculated form slow phase of DFOP model (ln(2)/k2)
5. Knoch, E., Dust M. (1999) (accepted in the RARs for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
6. Morlock (2006n) (accepted in the RARs for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
7. Morlock (2006m) (accepted in the RARs for metsulfuron-methyl; refer to the EFSA conclusion on the peer review of the active substance metsulfuron-methyl, EFSA (2015))
8. no geomean determinable with relative values of > 1000

**Table 8.6‑3: Summary of degradation in water/sediment of AE F145740**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F145740 Distribution: max. 12.6% total system (60-79 d), 9.2% water (79 d), 3.5% sediment (60-79 d)** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/**  **sed.** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU**  **level y/n/**  **Reference** |
| Pikeville | 7.1 /  5.4 a) | 45.4 | 150.9 | SFO | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(4) |
| Endpoint | | 45.4 |  |  |  |  |  |  |  |  |

1. measured in CaCl2
2. no reliable value determinable

**Table 8.6‑4: Summary of degradation in water/sediment of AE F145741**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F145741 Distribution: max. 8.7% total system (46 d), 7.0% water (46 d), 1.9% sediment (79-100 d)** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/**  **sed.** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU**  **level y/n/**  **Reference** |
| Pikeville | 7.1 /  5.4 a) | 73.4 | 243.7 | SFO | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(4) |
| Endpoint | | 73.4 |  |  |  |  |  |  |  |  |

1. measured in CaCl2
2. no reliable value determinable

**Table 8.6‑5: Summary of degradation in water/sediment of AE 0000119**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE 0000119 Distribution: max. 24.9% total system (120 d), 17.7% water (91 d), 15.0% sediment (182 d)** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/**  **sed.** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU**  **level y/n/**  **Reference** |
| Nidda | 8.3 / - | 27.1 | 90.2 | SFO | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(4) |
| Rhine | 7.7 / - | 29.8 | 98.9 | SFO | 84.6 | 281.0 | SFO | - a) | - a) | Y/ EFSA  Journal  2016;14(4) |
| Geometric mean (n=2) | | **28.4** |  |  |  |  |  |  |  |  |

a) no reliable value determinable

**Table 8.6‑6: Summary of degradation in water/sediment of AE F059411**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F059411 Distribution: max. 27.5% total system (182 d), 19.3% water (182 d), 8.3% sediment (182 d)** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/**  **sed.** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU**  **level y/n/**  **Reference** |
| Nidda | 8.3 / - | 9.9 | 32.8 | SFO | - a) | - a) | - a) | - a) | - a) | Y/ EFSA  Journal  2016;14(4) |
| Endpoint | | **9.9** |  |  |  |  |  |  |  |  |

a) no reliable value determinable

**Table 8.6‑7: Summary of degradation in water/sediment of AE 0014966**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE 0014966 Distribution: max. 15.5% total system (91 d), 11.8 water (100 d), 5.9% sediment (43 d)** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/**  **sed.** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU**  **level y/n/**  **Reference** |
| Pikeville | 7.1 /  5.4 a) | 43.8 | 145.7 | SFO | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(4) |
| Endpoint | | **43.8** |  |  |  |  |  |  |  |  |

1. measured in CaCl2
2. no reliable value determinable

Metabolites AE 0034855, AE F150737 and AE 1234964 are summarized in one table because no reliable values could be determined for all the metabolites and for all test systems.

**Table 8.6‑8: Summary of degradation in water/sediment of AE 0034855, AE F150737 and AE 1234964**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE 0034855 Distribution: max. 24.2% total system (182 d), 16.7 water (182 d), 10.7% sediment (150 d) AE F150737 Distribution: max. 7.8% total system (100 d = study end), 6.1 water (100 d), 1.6% sediment (100 d)**  **AE 1234964 Distribution: max. 7.4% total system (100 d = study end), 6.8 water (100 d), 0.6% sediment (100 d)** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/**  **sed.** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU**  **level y/n/**  **Reference** |
| Nidda | 8.3 / - | - b) | - b) | - b) | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(4) |
| Rhine | 7.7 / - | - b) | - b) | - b) | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(4) |
| Pikeville | 7.1 /  5.4 a) | - b) | - b) | - b) | - b) | - b) | - b) | - b) | - b) | Y/ EFSA  Journal  2016;14(4) |
| Endpoint | | - b) |  |  |  |  |  |  |  |  |

1. measured in CaCl2
2. no reliable value determinable

**Table 8.6‑9: Summary of observed metabolites**

|  |  |  |
| --- | --- | --- |
| **AE F075736 Water/sediment system** | Max. in water/sediment: 67.8% after 43 d (Rhine, triazinyl-label)  Max. in water: 57.0% after 43 d (Rhine, triazinyl-label)  Max. in sediment: 15.9% after 14 d (Rhine, triazinyl-label) | Y/ EFSA  Journal  2016;14(4) |
| **AE F145740 Water/sediment system** | Max. in water/sediment: 12.6% after 60 and 79 d (Pikeville, phenyl-label)  Max. in water: 9.2% after 79 d (Pikeville, phenyl-label)Max. in sediment: 3.5% after 60 and 79 d (Pikeville, phenyl-label) | Y/ EFSA  Journal  2016;14(4) |
| **AE F145741**  **Water/sediment system** | Max. in water/sediment: 8.7% after 46 d (Pikeville, phenyl-label) Max. in water: 7.0% after 46 d (Pikeville, phenyl-label)  Max. in sediment: 1.9% after 79 and 100 d (Pikeville, phenyl-label) | Y/ EFSA  Journal 2016;14(4) |
| **AE 0000119 Water/sediment system** | Max. in water/sediment: 24.9% after 120 d (Rhine, triazinyl-label)  Max. in water: 17.7% after 91 d (Rhine, triazinyl-label)  Max. in sediment: 15.0% after 182 d (Nidda, triazinyl-label) | Y/ EFSA  Journal  2016;14(4) |
| **AE F059411 Water/sediment system** | Max. in water/sediment: 27.5% after 182 d (Rhine, triazinyl-label)  Max. in water: 19.3% after 182 d (Rhine, triazinyl-label)  Max. in sediment: 8.3% after 182d (Rhine, triazinyl-label) | Y/ EFSA  Journal  2016;14(4) |
| **AE 0014966 Water/sediment system** | Max. in water/sediment: 15.5% after 91 d (Rhine, triazinyl-label)  Max. in water: 11.8% after 100 d (Pikeville, phenyl-label)  Max. in sediment: 5.9% after 43 d (Rhine, triazinyl-label) | Y/ EFSA  Journal  2016;14(4) |
| **AE 0034855 Water/sediment system** | Max. in water/sediment: 24.2% after 182 d (Rhine, triazinyl-label)  Max. in water: 16.7% after 182 d (Rhine, triazinyl-label)  Max. in sediment: 10.7% after 150 d (Rhine, triazinyl-label) | Y/ EFSA  Journal  2016;14(4) |
| **AE F150737 Water/sediment system** | Max. in water/sediment: 7.8% after 100 d (Pikeville, phenyl-label)  Max. in water: 6.1% after 100 d (Pikeville, phenyl-label)  Max. in sediment: 1.6% after 100 d (Pikeville, phenyl-label) | Y/ EFSA  Journal  2016;14(4) |
| **AE 1234964 Water/sediment system** | Max. in water/sediment: 7.4% after 100 d (Pikeville, phenyl-label)  Max. in water: 6.8% after 100 d (Pikeville, phenyl-label)  Max. in sediment: 0.6% after 100 d (Pikeville, phenyl-label) | Y/ EFSA  Journal  2016;14(4) |

### Mesosulfuron-methyl and its metabolites

The degradation of mesosulfuron-methyl in water/sediment systems has been evaluated, full details of these studies are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584, no additional studies are considered for this assessment.

**Table 8.6‑10: Summary of degradation in water/sediment of mesosulfuron-methyl**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mesosulfuron-methyl Distribution: Max. sed. 20.0% after 7 d** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14C-phenyl]-label) | 7.2/7.2 | 81.15 | 269.6 | SFO | 72.7 | 241.5 | SFO | No  reliable  DT50  derived | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | 68.93 | 228.98 | SFO | 61.65 | 204.8 | SFO | 62.83 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | 26.82 | 89.08 | SFO | 12.79  (back-DT50:  20.53) | 68.19 | FOMC | 79.32 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-pyrimidyl]-label) | 7.8/6.4 | 22.81 | 75.78 | SFO | 14.42 | 47.9 | SFO | 44.45 | SFO | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | 43.01 | - |  | 33.9 | - |  | 60.51 |  |  |

a) measured in CaCl2

**Table 8.6‑11: Summary of degradation in water/sediment of metabolite AE F154851**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F154851 Distribution: Max in total system 4.9% after 14 days** | | | | | | | | | |  |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14C-phenyl]-label) | 7.2/7.2 | 1000 |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | 100.04 | 332.34 | SFO | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | 11.03 | 36.64 | SFO | 33.11 | 110.0 | SFO | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-pyrimidyl]-label) | 7.8/6.4 | 8.12 | 26.98 | SFO | 25.29 | 84.02 | SFO | - | - | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | 54.7 | - |  | - | - |  | - |  |  |

a) measured in CaCl2

**Table 8.6‑12: Summary of degradation in water/sediment of metabolite AE F160459**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE F160459 Distribution: Max in total system 4.9% after 14 days** | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14C-phenyl]-label) | 7.2/7.2 | 1000 |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | 77.39 | 257.08 | SFO |  |  |  |  |  | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | 43.98 | 146.11 | SFO |  |  |  |  |  | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C- pyrimidyl]-label) | 7.8/6.4 | 17.45 | 57.98 | SFO |  |  |  |  |  | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | 87.8 | - |  |  |  |  |  |  |  |

a) measured in CaCl2

**Table 8.6‑13: Summary of degradation in water/sediment of metabolite AE F160460**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F160460 Distribution: Max in total system 8.4 % after 28 days** | | | | | | | | | | |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14C-phenyl]-label) | 7.2/7.2 | 1000 |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | 1000 |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | 101.6 | 337.4 | Peak down | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-pyrimidyl]-label) | 7.8/6.4 | 111.0 | 368.7 | Peak down | 70.59 | 234.5 |  | - | - | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | 325.9 | - |  | - | - |  | - |  |  |

a) measured in CaCl2

**Table 8.6‑14: Summary of degradation in water/sediment of metabolite AE F147447**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE F147447 Distribution: Max in total system 10.9% after 141 days** | | | | | | | | |  |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14C-phenyl]-label) | 7.2/7.2 | 1000 |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | 1000 | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-pyrimidyl]-label) | 7.8/6.4 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | 1000 | - |  | - | - |  | - |  |  |

a) measured in CaCl2

**Table 8.6‑15: Summary of degradation in water/sediment of metabolite AE F092944**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F092944 Distribution: Max in total system 3.2% after 112 days** | | | | | | | | | |  |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14C-phenyl]-label) | 7.2/7.2 | 1000 |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | 1000 |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-pyrimidyl]-label) | 7.8/6.4 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | 1000 | - |  | - | - |  | - |  |  |

a) measured in CaCl2

**Table 8.6‑16: Summary of degradation in water/sediment of metabolite AE F099095**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **AE F099095 Distribution: Max in total system 3.2% after 112 days** | | | | | | | | |  |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14C-phenyl]-label) | 7.2/7.2 | - |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | - |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-pyrimidyl]-label) | 7.8/6.4 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | - | - |  | - | - |  | - |  |  |

a) measured in CaCl2

**Table 8.6‑17: Summary of degradation in water/sediment of metabolite BCS-CV14885**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **BCS-CV14885 Distribution: Max in total system 22.0 % after 309 days** | | | | | | | | | |  |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14C-phenyl]-label) | 7.2/7.2 | - |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | - |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-pyrimidyl]-label) | 7.8/6.4 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | - | - |  | - | - |  | - |  |  |

a) measured in CaCl2

**Table 8.6‑18: Summary of degradation in water/sediment of metabolite BCS-CO60720**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **BCS-CO60720 Distribution: Max in total system 13.1 % after 365 days** | | | | | | | | | |  |
| **Water/sediment system** | **pH**  **water/ sed. a)** | **DegT50 whole syst.**  **(d)** | **DegT90 whole syst.**  **(d)** | **Kinetic,**  **Fit** | **DissT50 water**  **(d)** | **DissT90 water**  **(d)** | **Kinetic,**  **Fit** | **DissT50 sed.**  **(d)** | **Kinetic, Fit** | **Evaluated on EU level**  **y/n/ Reference** |
| Kies ([14Cphenyl]-label) | 7.2/7.2 | - |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Kies ([14C-pyrimidyl]-label) | 7.2/7.2 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-phenyl]-label) | 7.8/6.4 | - |  | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Nidda ([14C-pyrimidyl]-label) | 7.8/6.4 | - | - | - | - | - | - | - | - | Y/ EFSA  Journal  2016;14(10) |
| Geometric mean (n=4) | | - | - |  | - | - |  | - |  |  |

a) measured in CaCl2

**Table 8.6‑19: Summary of observed metabolites**

|  |  |  |
| --- | --- | --- |
| **AE F154851 Water/sediment system** | Max in total system 4.9% after 14 days  Nidda ([14C-phenyl]-label) | Y/ EFSA  Journal  2016;14(10) |
| **AE F160459 Water/sediment system** | Max in total system 21.6% after 112 days Kies ([14C-pyrimidyl]-label) | Y/ EFSA  Journal  2016;14(10) |
| **AE F160460 Water/sediment system** | Max in total system 8.4% after 28 days Nidda ([14C-pyrimidyl]-label) | Y/ EFSA  Journal  2016;14(10) |
| **AE F147447 Water/sediment system** | Max in total system 10.9% after 141 days Kies ([14C-phenyl]-label) | Y/ EFSA  Journal  2016;14(10) |
| **AE F092944 Water/sediment system** | Max in total system 3.2% after 112 days Nidda ([14C-pyrimidyl]-label) | Y/ EFSA  Journal  2016;14(10) |
| **AE F099095 Water/sediment system** | Max in total system 0.9% after 141 days Kies ([14C-pyrimidyl]-label) | Y/ EFSA  Journal  2016;14(10) |
| **BCS-CV14885 Water/sediment system** | Max in total system 22.0% after 309 days Kies ([14C-pyrimidyl]-label) | Y/ EFSA  Journal  2016;14(10) |
| **BCS-CO60720 Water/sediment system** | Max in total system 13.1% after 365 days Kies ([14C-pyrimidyl]-label) | Y/ EFSA  Journal  2016;14(10) |

### Mefenpyr-diethyl and its metabolites

Table 8.6‑20: Summary of degradation in water/sediment of mefenpyr-diethyl

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parent** | **Distribution (eg max in water 54-88% AR after 0 d. Max. sed 10-34% AR after 0 d)** | | | | | | | | | |
| Water / sediment system | pH  water phase | pH sed (CaCl2) | t. oC | DT50-DT90 whole sys.  deg=dis | χ2 | DT50-DT90  Water  Dissipation | χ2 | DT50- DT90  Sed.  Dissipation | χ2 | Method of calculation |
| Nidda | 9.0 | 7.1 | 22 | 1.0/3.5 | 11.3 | 0.65/2.2 | 29.1 | 0.95/3.1 | 2.0 | SFO |
| Gravel Pit | 7.7 | 6.9 | 22 | 1.1/3.6 | 19.1 | 0.92/3.0 | 21.2 | 1.5/4.8 | 5.6 | SFO |
| Geometric mean | | |  | 1.1 |  | 0.8 |  | 1.2 |  |  |

Table 8.6‑21: Summary of degradation in water/sediment of AE F113225

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F113225** | **Max. in water/sediment 82.8 % after 7 days** | | | | | | | | | |
| Water / sediment system | pH water phase | pH sed\* | t. oC | DT50-DT90 whole sys. | χ2 | DT50-DT90  Water  Dissipation | χ2 | DT50- DT90  Sed  Dissipation | χ2 | Method of calculation |
| Nidda | 9.0 | 7.1 | 22 | 32/107 (dis)  27/90 (deg1) | 14.9  16.1 | 29/96 | 17.8 | 24/81 | 4.7 | SFO |
| Gravel Pit | 7.7 | 6.9 | 22 | 56/186 (dis)  67/222 (deg2) | 14.0  17.3 | 57/190 | 15.2 | 37/124 | 8.6 | SFO |
| Geometric mean | | |  | 42 (dis) |  | 41 |  | 30 |  |  |

\* Measured in CaCl2

1 With a formation fraction of 0.7993 from parent

2 With a formation fraction of 0.8459 from parent

Table 8.6‑22: Summary of degradation in water/sediment of AE F114952

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F114952** | **Max. in water/sediment 18.6 % after 7 days** | | | | | | | | | |
| Water / sediment system | pH water phase | pH sed\* | t. oC | DT50-DT90 whole sys. | χ2 | DT50-DT90  Water  Dissipation | χ2 | DT50- DT90  Sed  Dissipation | χ2 | Method of calculation |
| Nidda | 9.0 | 7.1 | 22 | 17/56 (dis)  12/40 (deg1) | 21.0  25.4 | 18/60 | 22.8 | 7/24 | 7.0 | SFO |
| Gravel Pit | 7.7 | 6.9 | 22 | 24/79 (dis) | 12.3 | 18/60 | 10.4 | - | - | SFO |
| Geometric mean/median | | |  | 20 (dis) |  | 18 |  |  |  |  |

\* Measured in CaCl2

1 With a formation fraction of 0.2007 from parent

Table 8.6‑23: Summary of degradation in water/sediment of AE F109453

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AE F109453** | **Max. in water/sediment 46.5 % 101 days** | | | | | | | | | |
| Water / sediment system | pH water phase | pH sed\* | t. oC | DT50-DT90 whole sys.  Deg=diss | χ2 | DT50-DT90  Water  Dissipation | χ2 | DT50- DT90  Sed  Dissipation | χ2 | Method of calculation |
| 04/34\*\* | 7.5 | 7.1 | 20 | 69/230 | 5.1 | 48/159 | 6.1 | - | - | SFO |
| 04/35\*\* | 6.6 | 5.3 | 20 | 8/27 | 26.2 | 8/27 | 26.2 | - | - | SFO |
| Geometric mean/median | | |  | 23 |  | 20 |  |  |  |  |

\* Measured in CaCl2

\*\* Study conducted on AE F109453

Table 8.6‑24: Summary of degradation in water/sediment of AE F094270

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AE F094270 | Max. in water/sediment 62.4 % after 101 days | | | | | | | | | |
| Water / sediment system | pH water phase | pH sed\* | t. oC | DT50-DT90 whole sys. | χ2 | DT50-DT90  Water  Dissipation | χ2 | DT50- DT90  Sed  Dissipation | χ2 | Method of calculation |
| 04/34\*\* | 7.5 | 7.1 | 20 | - | - | - | - | - | - | - |
| 04/35\*\* | 6.6 | 5.3 | 20 | 136/451 (dis)  112/372 (deg1) | 4.9  25.9 | 92/306 | 10.2 | - | - | SFO |
| 05/006\*\*\* | 8.1 | 7.0 | 20 | 87/290 (dis=deg) | 5.2 | 47/156 | 9.1 | - | - | SFO |
| Geometric mean/median | | |  | 109 |  | 66 |  |  |  |  |

\* Measured in CaCl2

\*\* Study conducted on AE F109453

\*\*\* Study conducted on AE F094270

1 With a formation fraction of 1 from AE F109453

## Predicted Environmental Concentrations in soil (PECsoil) (KCP 9.1.3)

The registration report for Atlantis 12 OD did not include modelling for the safener mefenpyr-diethyl. As such, PECsoil calculations for mefenpyr-diethyl is provided by the applicant below.

### Justification for new endpoints

No new endpoints were used.

### Active substance(s) and relevant metabolite(s)

**Input parameters related to application:**

Table 8.7‑1: Input parameters related to application for PECsoil calculations - iodosulfuron-methyl-sodium

|  |  |
| --- | --- |
| Use No. | risk envelope covering all uses of iodosulfuron-methyl-sodium |
| Crop | cereals, maize, non-cropped area (risk envelope) |
| Application rate (g as/ha) | 10 g a.s./ha (risk envelope) |
| Number of applications/interval | 1 / - |
| Crop interception (%) | 0 |
| Depth of soil layer (relevant for plateau concentration) (cm) | 10 cm (no tillage) |

**Table 8.7‑2: Input parameters related to application for PECsoil calculations - mesosulfuron-methyl**

|  |  |
| --- | --- |
| Use No. | risk envelope covering all uses of mesosulfuron-methyl |
| Crop | cereals (risk envelope) |
| Application rate (g as/ha) | 15 g a.s./ha (risk envelope) |
| Number of applications/interval | 1 / - |
| Crop interception (%) | 0 |
| Depth of soil layer (relevant for plateau concentration) (cm) | 10 cm (no tillage) |

**Table 8.7‑3: Input parameters related to application for PECsoil calculations – mefenpyr-diethyl**

|  |  |
| --- | --- |
| Use No. | risk envelope covering all uses of mefenpyr-diethyl |
| Crop | cereals (risk envelope) |
| Application rate (g as/ha) | 45 g /ha (risk envelope) |
| Number of applications/interval | 1 / - |
| Crop interception (%) | 0 |
| Depth of soil layer (relevant for plateau concentration) (cm) | 5 cm |

**Substance parameters for active substances and metabolites:**

**Table 8.7‑4: Input parameter for iodosulfuron-methyl-sodium and relevant metabolites for**

**PECsoil calculation**

| **Compound** | **Molecular weight (g/mol)** | **Max. occurrence (%)** | **DT50 (days)** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| --- | --- | --- | --- | --- |
| iodosulfuron-methyl-sodium | 529.3 | 100 | 20.8 | Y /  EFSA Journal 2016;14(4) |
| AE F075736 | 381.4 | 88.5 | 66.7 | Y /  EFSA Journal 2016;14(4) |
| AE F145741 | 493.2 | 6.9 | 41.7 | Y /  EFSA Journal 2016;14(4) |
| AE F145740 | 493.2 | 8.7 | 55.8 | Y /  EFSA Journal 2016;14(4) |
| AE 0002166 | 397.4 | 20.0 | 10.1 | Y /  EFSA Journal 2016;14(4) |
| AE F161778 | 367.3 | 14.5 | 30.4 | Y /  EFSA Journal 2016;14(4) |
| BCS-CW81253 | 343.3 | 35.1 | 115.8 | Y /  EFSA Journal 2016;14(4) |
| AE 0000119 | 183.2 | 19.9 | 231 | Y /  EFSA Journal 2016;14(4) |
| AE F059411 | 140.1 | 40.9 | 276.9 | Y /  EFSA Journal 2016;14(4) |

**Table 8.7‑5: Input parameter for mesosulfuron-methyl and relevant metabolites for PECsoil calculation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Compound** | **Molecular weight (g/mol)** | **Max. occurrence (%)** | **DT50 (days)** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| Mesosulfuron-methyl | 503.5 | 100 | 140.1 | Y/ EFSA Journal 2016;14(10):4584 |
| AE F154851 | 489.5 | 16.2 | 207.4 | Y/ EFSA Journal 2016;14(10):4584 |
| AE F160459 | 489.5 | 8.9 | 129.8 | Y/ EFSA Journal 2016;14(10):4584 |
| AE F099095 | 198.2 | 29.2 | 185.5 | Y/ EFSA Journal 2016;14(10):4584 |
| AE F092944 | 155.2 | 10.1 | 82.7 | Y/ EFSA Journal 2016;14(10):4584 |
| AE F160460 | 475.5 | 8.6 | 44.2 | Y/ EFSA Journal 2016;14(10):4584 |
| AE F140584 | 322.4 | 7.1 | 13.5 | Y/ EFSA Journal 2016;14(10):4584 |
| AE F147447 | 290.3 | 6.5 | 157.1 | Y/ EFSA Journal 2016;14(10):4584 |

**Table 8.7‑6: Input parameter for mefenpyr-diethyl and relevant metabolites for PECsoil calculation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Compound** | **Molecular weight (g/mol)** | **Max. occurrence (%)** | **DT50 (days)** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| Mefenpyr-diethyl | 373.26 | - | not needed | No,  DAR 2011 |
| AE F113225 | 345.2 | 44.1 | not needed | No,  DAR 2011 |
| AE F094270 | 271.11 | 72.2 | 425 (worst-case) | No,  DAR 2011 |
| AE 2211046 | 391.26 | 11 | not needed | No,  DAR 2011 |

Mefenpyr-diethyl metabolite AE F114952 is an isomer of metabolite AE F113225. It is considered that the assessment performed for AE F113225 for soil covers the isomer AE F114952.

#### Iodosulfuron-methyl-sodium and its metabolites

**Table 8.7‑7: PECsoil for iodosulfuron-methyl-sodium**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | 0.013 | - | - | - |
| Short term | 24h | 0.013 | 0.013 | - | - |
| 2d | 0.012 | 0.013 | - | - |
|  | 4d | 0.012 | 0.012 | - | - |
| Long term | 7d | 0.011 | 0.012 | - | - |
| 14d | 0.008 | 0.011 | - | - |
| 21d | 0.007 | 0.01 | - | - |
| 28d | 0.005 | 0.009 | - | - |
| 42 d | 0.003 | 0.007 | - | - |
| 50d | 0.003 | 0.006 | - | - |
| 100d | <0.001 | 0.004 | - | - |

**Table 8.7‑8: PECsoil for AE F075736**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | 0.009 | - | - | - |
| Short term | 24h | 0.008 | 0.008 | - | - |
| 2d | 0.008 | 0.008 | - | - |
| 4d | 0.008 | 0.008 | - | - |
| Long term | 7d | 0.008 | 0.008 | - | - |
| 14d | 0.007 | 0.008 | - | - |
| 21d | 0.007 | 0.008 | - | - |
| 28d | 0.006 | 0.007 | - | - |
| 42 d | 0.005 | 0.007 | - | - |
| 50d | 0.005 | 0.007 | - | - |
| 100d | 0.003 | 0.005 | - | - |

**Table 8.7‑9: PECsoil for AE F145741**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | 0.001 | - | - | - |
| Short term | 24h | 0.001 | 0.001 | - | - |
| 2d | 0.001 | 0.001 | - | - |
| 4d | 0.001 | 0.001 | - | - |
| Long term | 7d | 0.001 | 0.001 | - | - |
| 14d | 0.001 | 0.001 | - | - |
| 21d | 0.001 | 0.001 | - | - |
| 28d | 0.001 | 0.001 | - | - |
| 42d | 0.001 | 0.001 | - | - |
| 50d | 0.001 | 0.001 | - | - |
| 100d | 0.001 | 0.001 | - | - |

**Table 8.7‑10: PECsoil for AE F145740**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | 0.001 | - | - | - |
| Short term | 24h | 0.001 | 0.001 | - | - |
| 2d | 0.001 | 0.001 | - | - |
| 4d | 0.001 | 0.001 | - | - |
| Long term | 7d | 0.001 | 0.001 | - | - |
| 14d | 0.001 | 0.001 | - | - |
| 21d | 0.001 | 0.001 | - | - |
| 28d | 0.001 | 0.001 | - | - |
| 42d | 0.001 | 0.001 | - | - |
| 50d | 0.001 | 0.001 | - | - |
| 100d | 0.001 | 0.001 | - | - |

**Table 8.7‑11: PECsoil for AE 0002166**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | 0.001 | - | - | - |
| Short term | 24h | 0.001 | 0.001 | - | - |
| 2d | 0.001 | 0.001 | - | - |
| 4d | 0.001 | 0.001 | - | - |
| Long term | 7d | 0.001 | 0.001 | - | - |
| 14d | 0.001 | 0.001 | - | - |
| 21d | 0.001 | 0.001 | - | - |
| 28d | 0.001 | 0.001 | - | - |
| 42d | 0.001 | 0.001 | - | - |
| 50d | 0.001 | 0.001 | - | - |
| 100d | 0.001 | 0.001 | - | - |

**Table 8.7‑12: PECsoil for AE F161778**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | 0.001 | - | - | - |
| Short term | 24h | 0.001 | 0.001 | - | - |
| 2d | 0.001 | 0.001 | - | - |
| 4d | 0.001 | 0.001 | - | - |
| Long term | 7d | 0.001 | 0.001 | - | - |
| 14d | <0.001 | 0.001 | - | - |
| 21d | <0.001 | 0.001 | - | - |
| 28d | <0.001 | < 0.001 | - | - |
| 42d | <0.001 | < 0.001 | - | - |
| 50d | <0.001 | < 0.001 | - | - |
| 100d | <0.001 | < 0.001 | - | - |

**Table 8.7‑13: PECsoil for BCS-CW81253**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) | | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial | | 0.003 | - | - | - |
| Short term | 24h | 0.003 | 0.003 | - | - |
| 2d | 0.003 | 0.003 | - | - |
| 4d | 0.003 | 0.003 | - | - |
| Long term | 7d | 0.003 | 0.003 | - | - |
| 14d | 0.003 | 0.003 | - | - |
| 21d | 0.003 | 0.003 | - | - |
| 28d | 0.003 | 0.003 | - | - |
| 42d | 0.002 | 0.003 |  |  |
| 50d | 0.002 | 0.003 | - | - |
| 100d | 0.002 | 0.002 | - | - |
| Plateau concentration (10 cm) | | <0.001 | - | - | - |
| PECaccumulation (PECact +PECsoil plateau) | | 0.003 | - | - | - |

**Table 8.7‑14: PECsoil for AE 0000119**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) | | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial | | <0.001 | - | - | - |
| Short term | 24h | <0.001 | <0.001 | - | - |
| 2d | <0.001 | <0.001 | - | - |
| 4d | <0.001 | <0.001 | - | - |
| Long term | 7d | <0.001 | <0.001 | - | - |
| 14d | <0.001 | <0.001 | - | - |
| 21d | <0.001 | <0.001 | - | - |
| 28d | <0.001 | <0.001 | - | - |
| 42d | <0.001 | <0.001 | - | - |
| 50d | <0.001 | <0.001 | - | - |
| 100d | <0.001 | <0.001 | - | - |
| Plateau concentration (10 cm) | | <0.001 | - | - | - |
| PECaccumulation (PECact +PECsoil plateau) | | 0.001 | - | - | - |

**Table 8.7‑15: PECsoil for AE F059411**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) | | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial | | 0.001 | - | - | - |
| Short term | 24h | 0.001 | 0.001 | - | - |
| 2d | 0.001 | 0.001 | - | - |
| 4d | 0.001 | 0.001 | - | - |
| Long term | 7d | 0.001 | 0.001 | - | - |
| 14d | 0.001 | 0.001 | - | - |
| 21d | 0.001 | 0.001 | - | - |
| 28d | 0.001 | 0.001 | - | - |
| 42d | 0.001 | 0.001 | - | - |
| 50d | 0.001 | 0.001 | - | - |
| 100d | 0.001 | 0.001 | - | - |
| Plateau concentration (10 cm) | | <0.001 | - | - | - |
| PECaccumulation (PECact +PECsoil plateau) | | 0.002 | - | - | - |

#### Mesosulfuron-methyl and its metabolites

**Table 8.7‑16: PECsoil for mesosulfuron-methyl**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) | | Risk envelope approach – cereals, maize, non-cropped area | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial | | 0.020 | - | - | - |
| Short term | 24h | 0.020 | 0.020 | - | - |
| 2d | 0.020 | 0.020 | - | - |
| 4d | 0.020 | 0.020 | - | - |
| Long term | 7d | 0.019 | 0.020 | - | - |
| 14d | 0.019 | 0.019 | - | - |
| 21d | 0.018 | 0.019 | - | - |
| 28d | 0.017 | 0.019 | - | - |
| 42d | 0.016 | 0.018 | - | - |
| 50d | 0.016 | 0.018 | - | - |
| 100d | 0.012 | 0.016 | - | - |
| Plateau concentration (10 cm)  after year 2 | | 0.002 | - | - | - |
| PECaccumulation  (PECact +PECsoil plateau) | | 0.022 | - | - | - |

**Table 8.7‑17: PECsoil for AE F154851**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | | Risk envelope approach – cereals | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | | 0.003 | - | - | - |
| Short term |  | 24h | 0.003 | 0.003 | - | - |
| 2d | 0.003 | 0.003 | - | - |
| 4d | 0.003 | 0.003 | - | - |
| Long term |  | 7d | 0.003 | 0.003 | - | - |
| 14d | 0.003 | 0.003 | - | - |
| 21d | 0.003 | 0.003 | - | - |
| 28d | 0.003 | 0.003 | - | - |
| 42d | 0.003 | 0.003 | - | - |
| 50d | 0.003 | 0.003 | - | - |
| 100d | 0.002 | 0.003 | - | - |
|  | Plateau concentration (10 cm) after year 2 | | <0.001 | - | - | - |
|  | PECaccumulation (PECact +PECsoil plateau) | | 0.004 | - | - | - |

**Table 8.7‑18: PECsoil for AE F160459**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | | Risk envelope approach – cereals | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | | 0.002 | - | - | - |
| Short term |  | 24h | 0.002 | 0.002 | - | - |
| 2d | 0.002 | 0.002 | - | - |
| 4d | 0.002 | 0.002 | - | - |
| Long term |  | 7d | 0.002 | 0.002 | - | - |
| 14d | 0.002 | 0.002 | - | - |
| 21d | 0.002 | 0.002 | - | - |
| 28d | 0.001 | 0.002 | - | - |
| 42d | 0.001 | 0.002 | - | - |
| 50d | 0.001 | 0.002 | - | - |
| 100d | 0.001 | 0.001 | - | - |
|  | Plateau concentration (10 cm) after year 2 | | <0.001 | - | - | - |
|  | PECaccumulation (PECact +PECsoil plateau) | | 0.002 | - | - | - |

**Table 8.7‑19: PECsoil for AE F099095**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | | Risk envelope approach – cereals | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | | 0.002 | - | - | - |
| Short term |  | 24h | 0.002 | 0.002 | - | - |
| 2d | 0.002 | 0.002 | - | - |
| 4d | 0.002 | 0.002 | - | - |
| Long term |  | 7d | 0.002 | 0.002 | - | - |
| 14d | 0.002 | 0.002 | - | - |
| 21d | 0.002 | 0.002 | - | - |
| 28d | 0.002 | 0.002 | - | - |
| 42d | 0.002 | 0.002 | - | - |
| 50d | 0.002 | 0.002 | - | - |
| 100d | 0.002 | 0.002 | - | - |
|  | Plateau concentration (10 cm) after year 2 | | <0.001 | - | - | - |
|  | PECaccumulation (PECact +PECsoil plateau) | | 0.003 | - | - | - |

**Table 8.7‑20: PECsoil for AE F092944**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | | Risk envelope approach – cereals | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | | <0.001 | - | - | - |
| Short term |  | 24h | <0.001 | <0.001 | - | - |
| 2d | <0.001 | <0.001 | - | - |
| 4d | <0.001 | <0.001 | - | - |
| Long term |  | 7d | <0.001 | <0.001 | - | - |
| 14d | <0.001 | <0.001 | - | - |
| 21d | <0.001 | <0.001 | - | - |
| 28d | <0.001 | <0.001 | - | - |
| 42d | <0.001 | <0.001 | - | - |
| 50d | <0.001 | <0.001 | - | - |
| 100d | <0.001 | <0.001 | - | - |
|  | Plateau concentration (10 cm) after year 1 | | <0.001 | - | - | - |
|  | PECaccumulation (PECact +PECsoil plateau) | | <0.001 | - | - | - |

**Table 8.7‑21: PECsoil for AE F160460**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | | Risk envelope approach – cereals | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | | 0.002 | - | - | - |
| Short term |  | 24h | 0.002 | 0.002 | - | - |
| 2d | 0.002 | 0.002 | - | - |
| 4d | 0.002 | 0.002 | - | - |
| Long term |  | 7d | 0.001 | 0.002 | - | - |
| 14d | 0.001 | 0.001 | - | - |
| 21d | 0.001 | 0.001 | - | - |
| 28d | 0.001 | 0.001 | - | - |
| 42d | <0.001 | 0.001 | - | - |
| 50d | <0.001 | 0.001 | - | - |
| 100d | <0.001 | <0.001 | - | - |
|  | Plateau concentration (10 cm) after year 1 | | <0.001 | - | - | - |
|  | PECaccumulation (PECact +PECsoil plateau) | | 0.002 | - | - | - |

**Table 8.7‑22: PECsoil for AE F140584**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | | Risk envelope approach – cereals | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | | <0.001 | - | - | - |
| Short term |  | 24h | <0.001 | <0.001 | - | - |
| 2d | <0.001 | <0.001 | - | - |
| 4d | <0.001 | <0.001 | - | - |
| Long term |  | 7d | <0.001 | <0.001 | - | - |
| 14d | <0.001 | <0.001 | - | - |
| 21d | <0.001 | <0.001 | - | - |
| 28d | <0.001 | <0.001 | - | - |
| 42d | <0.001 | <0.001 | - | - |
| 50d | <0.001 | <0.001 | - | - |
| 100d | <0.001 | <0.001 | - | - |
|  | Plateau concentration (10 cm) after year 2 | | <0.001 | - | - | - |
|  | PECaccumulation (PECact +PECsoil plateau) | | <0.001 | - | - | - |

**Table 8.7‑23: PECsoil for AE F147447**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PECsoil (mg/kg) |  | | Risk envelope approach – cereals | | | |
| Single application | | Multiple applications | |
| Actual | TWA | Actual | TWA |
| Initial |  | | <0.001 | - | - | - |
| Short term |  | 24h | <0.001 | <0.001 | - | - |
| 2d | <0.001 | <0.001 | - | - |
| 4d | <0.001 | <0.001 | - | - |
| Long term |  | 7d | <0.001 | <0.001 | - | - |
| 14d | <0.001 | <0.001 | - | - |
| 21d | <0.001 | <0.001 | - | - |
| 28d | <0.001 | <0.001 | - | - |
| 42d | <0.001 | <0.001 | - | - |
| 50d | <0.001 | <0.001 | - | - |
| 100d | <0.001 | <0.001 | - | - |
|  | Plateau concentration (10 cm) after year 2 | | <0.001 | - | - | - |
|  | PECaccumulation (PECact +PECsoil plateau) | | <0.001 | - |  |  |

#### Mefepyr-diethyl and its metabolites

Table 8.7‑24: PECsoil for mefenpyr-diethyl and its metabolites

|  |  |  |  |
| --- | --- | --- | --- |
| **Compound** | **Initial PECsoil (mg/kg)** | **Plateau concentration**  **(5 cm)** | **PECsoil accumulation (mg/kg) \*** |
| mefenpyr-diethyl | 0.060 | - | - |
| AE F113225 | 0.024 | - | - |
| AE F094270 | 0.031 | 0.038 | 0.070 |
| AE 2211046 | 0.007 | - | - |

\* PECaccumulation = PECsoil,max +PECsoil plateau (5 cm)

#### PECsoil of 054-01-05

PECsoil is calculated using a standard approach with 5 cm mixing depth and soil density of 1.5 kg/L and a crop interception of 0% for the maximum application rate of 1.5 L/ha.

Table 8.7‑25: PECsoil for 054-01-05 on winter cereals and spring cereals

| Active  substance/  preparation | Application rate (g/ha) | PECact (mg/kg) | Tillage depth (cm) | PECsoil,plateau (mg/kg) |
| --- | --- | --- | --- | --- |
| 054-01-05 | 1500 | 2.000 | 5 | - |

\* The PEC for the formulation was calculated with an interception rate of 0%

# density: 1.0 kg/L

PECsoil is calculated using a standard approach with 5 cm mixing depth and soil density of 1.5 kg/L. No degradation data is available for the product. Therefore, TWA, plateau, and accumulation concentrations are not calculated, and tillage depth is not relevant here.

**RMS comments:**

**Iodosulfuron-methyl-sodium**

PECsmax (1st year) and PECacc (during 20 years) for the active substance iodosulfuron-methyl-sodium and its metabolites AE F075736, AE F145740, AE F145741, AE 0000119, AE F059411, AE F161778, BCS-CW81253 and AE 0002166 were calculated with the ESCAPE PECsoil calculator.

The degradation endpoint used corresponds to the worst case lab-DT50, normalised to 20 °C and pF 2 in accordance with the LoEP (EFSA Journal 2016;14(10):4584). Maximum occurrence of the metabolites and molecular weight are in accordance with LoEP (EFSA Journal, 2016; 14(4):4453)

All intended uses are covered by the risk in the presented PECsoil calculations, application rates, application timing and crop interception (0 %) are appropriate to reflect a worst-case scenario for the intended uses.

The PECsoil-values for iodosulfuron-methyl-sodium and the metabolites that can be used for the risk assessment are presented from Table 8.7-7 to Table 8.7-15.

**Mesosulfuron-methyl**

PECmax (1st year) and PECacc (during 20 years) for the active substance mesosulfuron-methyl and its metabolites AE F154851, AE F160459, AE F099095, AE F092944, AE F160460, AE F140584, AE F147447 were calculated with ESCAPE calculator PECsoil.

The degradation endpoint used corresponds was in accordance with the LoEP (EFSA Journal 2016;14(10):4584). Maximum occurrence of the metabolites and molecular weight are in accordance with LoEP (EFSA Journal,

All intended uses are covered by the risk in the presented PECsoil calculations, i.e. application rates, application timing and crop interception (0 %) are appropriate to reflect a worst-case scenario for the intended uses.

The PECsoil-values for mesosulfuron-methyl that can be used for the risk assessment are presented from Table 8.7-16 to Table 8.7-23.

Following an application of 1 x 1500 g/ha product/ha and considering the density of 1.0 g/mL and an interception of 0 %, PECsoil for the formulation was calculated to 2.000mg/kg (see Table 8.7-2.4).

The PECs for risk assessment of the safener mefenpyr-diethyl was accepted by the zRMS.

## Predicted Environmental Concentrations in groundwater (PECgw) (KCP 9.2.4)

The product 054-01-05 is believed to be comparable to Atlantis 12 OD and out of protection data on Atlantis 12 OD can be used to support the authorisation of 054-01-05. However, the zRMS has requested that modelling be carried out with the latest versions of the groundwater models, i.e. PEARL 5.5.5. and PELMO 6.6.4. As such, modelling using new model version is provided below. Substance and application inputs were identical to those provided in the Atlantis 12 OD registration report.

The registration report for Atlantis 12 OD did not include modelling for the safener mefenpyr-diethyl. As such, groundwater modelling for mefenpyr-diethyl is provided by the applicant below.

### Justification for new endpoints

No new endpoints were used.

### Active substance(s) and relevant metabolite(s) (KCP 9.2.4.1)

**Table 8.8‑1: Input parameters related to application for PECgw calculations**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use No. | 5 | 16 | 2 | 4 |
| Crop | Winter cereals (arable crops) | Winter cereals (arable crops) | Winter cereals (arable crops) | Spring cereals (arable crops) |
| Application rate (g as/ha) | Iodosulfuron-methyl-sodium:  3 g a.s./ha (PEARL,  PELMO)  10 g a.s./ha (MACRO,  risk envelope#)    Mesosulfuron-methyl: 15 g a.s./ha | Iodosulfuron-methyl-sodium:  2.4 g a.s./ha (PEARL,  PELMO)  10 g a.s./ha (MACRO,  risk envelope#)    Mesosulfuron-methyl: 12 g a.s./ha | Iodosulfuron-methyl-sodium:  2.4 g a.s./ha (PEARL,  PELMO, risk envelope - covered by PECgw for Use 16 )  10 g a.s./ha (MACRO,  risk envelope#)    Mesosulfuron-methyl: 10 g a.s./ha | Iodosulfuron-methyl-sodium:  2 g a.s./ha (PEARL,  PELMO)  10 g a.s./ha (MACRO,  risk envelope#)    Mesosulfuron-methyl: 10 g a.s./ha |
| Number of applications/  interval (d) | 1 / - | 1 / - | 1 / - | 1 / - |
| Relative application date | End of winter to spring use: see specific information provided below.  Application window used for modelling: see Table 8.8‑2 | Autumn use - relative date setting: 14 days after FOCUS crop event dates for emergence.  Application window used for modelling: see Table 8.8‑3 | Autumn use - relative date setting: 14 days after FOCUS crop event dates for emergence.  Application window used for modelling: see Table 8.8‑3 | Spring use: absolute date setting based on  AppDate tool (BBCH  13)  Application window used for modelling: see Table 8.8‑4 |
| Crop interception (%) | 0% | 0% | 0% | 0% |
| Frequency of application | annual use | 2 simulations:   * annual use * use only every second year | annual use | annual use |
| Models used for calculation | FOCUS PEARL v5.5.5, FOCUS PELMO v6.6.4, FOCUS MACRO v5.5.4 | FOCUS PEARL v5.5.5, FOCUS PELMO v6.6.4, FOCUS MACRO v5.5.4 | FOCUS PEARL v5.5.5, FOCUS PELMO v6.6.4, FOCUS MACRO v5.5.4 | FOCUS PEARL v5.5.5, FOCUS PELMO v6.6.4, FOCUS MACRO v5.5.4 |

#) PECgw MACRO simulation for the active substance **iodosulfuron-methyl-sodium** and its metabolites was addressed via risk envelope approach, based on the maximum application rate of 10 g a.s./ha supported for any products of Bayer AG in Europe. In context of the present formulation, such assessment is overly conservative, but clearly demonstrates macropore flow of all components below the European trigger level of 0.1 µg/L.

**Explanatory note on definition of application dates:**

* **end-of-winter to spring use in winter cereals ..**

The application in winter cereals according to GAP is intended at the onset of the spring vegetation period, when climate conditions allow for resumption of crop and weed growth after winter dormancy and soil moisture level allows again for field traffic ability by the farmer's equipment. Treatment is made to well-established crop at the growth stage reached at that time, within the BBCH boundaries specified in the GAP. No pre-defined event dates are implemented in the FOCUS model that would directly translate this cropping situation into discrete calendar dates for each groundwater scenario setting. To generate an adequate scenario-adapted representation with relative date setting, the following approach was therefore used: the simulated treatment was referenced relative to the tabulated crop emergence date of the earliest emerging spring crop (i.e. not necessarily cereals) that was defined by FOCUS for the respective scenario. The application is then set 14 days before this respective date as a conservative estimate of the beginning of the vegetation period, at the same time avoiding unrealistically early applications which would never occur under normal conditions (e.g., farmer spraying snow-covered fields or frozen soil).

An overview of the date selection per scenario is presented in the table below; for technical reason, such application dates must be entered to the simulation model formally as ‘absolute’ dates, even though referencing was in fact of relative type.

The approach and resulting model application date settings were discussed and agreed suitable during the EU review of active substance mesosulfuron-methyl (cf. DAR Vol. 3 – B.8(PPP) – Atlantis OD).

**Table 8.8‑2: Application dates used for groundwater exposure assessment – End-of-winter use in winter cereals**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **Earliest emerging crop**  **(to define begin of vegetation period)** | **Tabulated Emergence date** | **Selected Application date for winter cereals** |
| Winter cereals | Châteaudun | spring cereals | 10-Mar | **24 Feb** |
| Hamburg | carrots | 10-Mar | **24 Feb** |
| Jokioinen | spring cereals | 18-May | **04 May** |
| Kremsmünster | carrots | 10-Mar | **24 Feb** |
| Okehampton | field beans | 15-Mar | **01 Mar** |
| Piacenza | sugar beet | 20-Mar | **06 Mar** |
| Porto | carrots | 28-Feb | **14 Feb** |
| Sevilla | cabbage | 01-Mar | **15 Feb** |
| Thiva | potatoes | 01-Mar | **15 Feb** |

* **autumn use in winter cereals:**

Model application timing for the autumn use GAP on winter cereals was defined relative to the tabulated crop emergence date per FOCUS scenario. A treatment 14 days after crop emergence date was considered to represent a typical use timing for the present product, which translates in a model date selection as follows:

**Table 8.8‑3: Application dates used for groundwater exposure assessment – Autumn use in winter cereals**

|  |  |  |
| --- | --- | --- |
| **Crop** | **Scenario** | **Application dates (absolute)** |
| Winter cereals, autumn use | Châteaudun | 09 Nov |
| Hamburg | 15 Nov |
| Jokioinen | 04 Oct |
| Kremsmünster | 19 Nov |
| Okehampton | 31 Oct |
| Piacenza | 15 Dec |
| Porto | 14 Dec |
| Sevilla | 14 Dec |
| Thiva | 14 Dec |

* **spring use in spring cereals**

Model application timing for the spring use GAP on spring cereals was defined via absolute date setting based on the AppDate tool, to represent a treatment at earliest intended growth stage according to GAP (BBCH 13) as a worst case. This procedure translates into a model application date selection as follows:

**Table 8.8‑4: Application dates used for groundwater exposure assessment – spring use in spring cereals**

|  |  |  |
| --- | --- | --- |
| **Crop** | **Scenario** | **Application dates (absolute)** |
| Spring cereals, spring use | Châteaudun | 16 Mar |
| Hamburg | 06 Apr |
| Jokioinen | 21 May |
| Kremsmünster | 06 Apr |
| Okehampton | 05 Apr |
| Porto | 16 Mar |

#### Iodosulfuron-methyl-sodium and its metabolites

For iodosulfuron-methyl-sodium, the exposure assessment may follow a tiered approach as described below, for which dedicated modelling endpoints were agreed in the EU review.

1. **Tier 1[[1]](#footnote-1):** soil kinetics (DT50 and formation fractions) for all components based on geomean of standard laboratory study data

1. **Tier 2[[2]](#footnote-2):** soil degradation kinetics for parent a.s. and metabolite AE F075736 (DT50 and formation fraction) based on geomean of field soil dissipation study data; consideration of EU agreed plant uptake factor for metabolite AE F075736; kinetic parameters for other metabolites – where considered in this step - are based on laboratory studies.

**Table 8.8‑5: Input parameters related to active substance iodosulfuron-methyl-sodium and metabolites for PECgw calculations (Tier 1)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Compound** | **Iodosulfuron-methyl-sodium** | **AE F075736** | **AE F145741** | **AE F145740** | **Value in accordance with EU endpoint**  **y/n/**  **Reference\*** |
| Molecular weight (g/mol) | 529.3 | 381.4 | 493.2 | 493.2 | Y /  EFSA  2016;14(4) |
| Water solubility (g/mol): | 25000  (20°C) | 2790  (20°C) | 1000 mg/L a | 1000 mg/L a | Y /  EFSA  2016;14(4) |
| Saturated vapour pressure (Pa): | 2.6x10-9 #  (20°C) | 1.0x10-10  (20°C) | 1x10-10 Pa a | 1x10-10 Pa a | # Y /  EFSA  2016;14(4)    aN / Worst case assumption |
| DT50 in soil (d) | 2.7  (geomean, normalisation to pF2, 20 °C with  Q10 of 2.58, n  =11) | 24.9 (geomean, normalisation to pF2, 20 °C with  Q10 of 2.58, n  =19) | 8.7  (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =5) | 46.0 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =4) | Y /  EFSA  2016;14(4) |
| Transformation rate (Rate constant) | 0.25672 | 0.02784 | 0.07967 | 0.01507 | Y /  EFSA  2016;14(4) |
| Kfoc (mL/g)/Kfom | 33.4 (geometric mean, n = 9) | 14.0 (geometric mean, n = 22) | 0 | 17.9 (geometric mean, n = 4) | Y /  EFSA  2016;14(4) |
| 1/n | 0.87 (arithmetic mean, n = 9) | 1.0 (arithmetic mean, n = 22) | 1.0 | 0.92 (arithmetic mean, n = 4) | Y /  EFSA  2016;14(4) |
| Plant uptake factor | 0 | 0 | 0 | 0 | N /  Worst case assumption |
| Formation fraction | - | 0.86 (from IMS) | 0.05 (from IMS) | 0.04 (from IMS) | Y /  EFSA  2016;14(4) |

a Not measured. Default value used

**Table 8.8‑6: Input parameters related to iodosulfuron-methyl-sodium metabolites for**

**PECgw calculations (Tier 1)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Compound** | **AE 0002166** | **AE F161778** | **BCS-**  **CW81253** | **AE 0000119** | **AE F059411** | **Value in accordance with EU**  **endpoint**  **y/n/**  **Reference\*** |
| Molecular weight (g/mol) | 397.4 | 367.3 | 343.3 | 183.2 | 140.1 | Y /  EFSA  2016;14(4) |
| Water solubility (g/mol): | 1000 mg/L a | 1000 mg/L a | 1000 mg/L a | 200  (20°C) | 1000 mg/L a | Y /  EFSA  2016;14(4) |
| Saturated vapour pressure (Pa): | 1x10-10 Pa a | 1x10-10 Pa a | 1x10-10 Pa a | 1x10-10 Pa a | 1x10-10 Pa a | N /  Worst case assumption |
| DT50 in soil (d) | 7.5  (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =4) | 11.4 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =14) | 26.7 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =10) | 15.0 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =9) | 144 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =16) | Y /  EFSA  2016;14(4) |
| Transformation rate  (Rate constant) | 0.09242 | 0.06080 | 0.02596 | 0.04621 | 0.00481 | Y /  EFSA  2016;14(4) |
| Kfoc (mL/g)/Kfom | 0 | 29.7 (geometric mean, n = 6) | 41.8 (geometric mean, n = 7) | 117.2 (geometric mean, n = 9) | 45.6 (geometric mean, n = 27) | Y /  EFSA  2016;14(4) |
| 1/n | 1.0 | 1.0 (arithmetic mean, n = 6) | 0.91 (arithmetic mean, n = 7) | 0.91 (arithmetic mean, n = 9) | 0.9 (arithmetic mean, n = 27) | Y /  EFSA  2016;14(4) |
| Plant uptake factor | 0 | 0 | 0 | 0 | 0 | N /  Worst case assumption |
| Formation fraction | n.a. | 0.55 (from AE  F076736) | 0.72 (from AE  161778) | 0.33 (from AE  F076736) | 0.42 (from AE  F076736) | Y /  EFSA  2016;14(4) |

a Not measured. Default value used

**Table 8.8‑7: Input parameters related to iodosulfuron-methyl-sodium and AE F075736 for**

**PECgw calculations (Tier 2 – using degradation data from field studies)**

| **Compound** | **Iodosulfuron-methyl-sodium** | **AE F075736** | **Value in accordance with EU endpoint y/n/ Reference\*** |
| --- | --- | --- | --- |
| Molecular weight (g/mol) | 529.3 | 381.4 | Y /  EFSA 2016;14(4) |
| Water solubility (g/mol): | 25000  (20°C) | 2790  (20°C) | Y /  EFSA 2016;14(4) |
| Saturated vapour pressure (Pa): | 2.6x10-9 #  (20°C) | 1.0x10-10  (20°C) | # Y /  EFSA 2016;14(4)    N /  Worst case assumption |
| DT50 in soil (d) | 3.2  (geomean from field studies, normalisation to pF2, 20 °C with Q10 of  2.58, n =5) | 13.2  (geomean from field studies, normalisation to pF2, 20 °C with Q10 of  2.58, n =9) | Y /  EFSA 2016;14(4) |
| Transformation rate (Rate constant) | 0.21661 | 0.05251 | Y /  EFSA 2016;14(4) |
| Kfoc (mL/g)/Kfom | 33.4  (geometric mean, n = 9) | 14.0  (geometric mean, n = 22) | Y /  EFSA 2016;14(4) |
| 1/n | 0.87 (arithmetic mean, n = 9) | 1.0 (arithmetic mean, n = 22) | Y / EFSA 2016;14(4) |
| Plant uptake factor | 0 | 0.5 | Y /  EFSA 2016;14(4) |
| Formation fraction | - | 0.55 (from IMS) | Y /  EFSA 2016;14(4) |

**(a) Tier 1 PECgw FOCUS PEARL, PELMO and MACRO - parent substance and all metabolites**

**Table 8.8‑8: Tier 1 PECgw for iodosulfuron-methyl-sodium and metabolites: AE F075736,**

**AE F145741**

**– Use: Winter Cereals, 1×3 g a.s./ha, end of winter-spring use**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **Iodosulfuron-methyl-sodium** | | **AE F075736** | | **AE F145741** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    End of winter to spring application,    3 g a.s./ha ≡  1.5 L prod. /ha | Châteaudun | <0.001 | <0.001 | 0.023 | 0.021 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.075 | 0.051 | 0.001 | 0.001 |
| Jokioinen | <0.001 | <0.001 | 0.073 | 0.071 | 0.002 | 0.002 |
| Kremsmünster | <0.001 | <0.001 | 0.047 | 0.048 | 0.001 | 0.001 |
| Okehampton | <0.001 | <0.001 | 0.064 | 0.062 | 0.001 | 0.001 |
| Piacenza | <0.001 | <0.001 | 0.029 | 0.030 | <0.001 | 0.001 |
| Porto | <0.001 | <0.001 | 0.031 | 0.034 | 0.001 | 0.002 |
| Sevilla | <0.001 | <0.001 | 0.002 | 0.002 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | 0.008 | 0.005 | <0.001 | <0.001 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | <0.001 | | 0.045 | | <0.001 | |

data origin (modelling report & crop no.): 2)EnSa-16-0388, Winter Cereals 1.

**Table 8.8‑9: Tier 1 PECgw for iodosulfuron-methyl-sodium metabolites: AE F145740, AE**

**0002166, AE F161778**

* **Use: Winter Cereals, 1×3 g a.s./ha, end of winter-spring use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F145740** | | **AE 0002166** | | **AE F161778** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    End of winter to spring application,    3 g a.s./ha ≡  1.5 L prod. /ha | Châteaudun | 0.002 | 0.002 | <0.001 | <0.001 | 0.007 | 0.006 |
| Hamburg | 0.004 | 0.004 | 0.002 | 0.003 | 0.020 | 0.014 |
| Jokioinen | 0.003 | 0.004 | 0.003 | 0.003 | 0.017 | 0.016 |
| Kremsmünster | 0.003 | 0.003 | 0.001 | 0.001 | 0.015 | 0.015 |
| Okehampton | 0.004 | 0.004 | 0.002 | 0.004 | 0.020 | 0.019 |
| Piacenza | 0.002 | 0.002 | 0.001 | 0.001 | 0.009 | 0.010 |
| Porto | 0.002 | 0.002 | 0.003 | 0.009 | 0.009 | 0.009 |
| Sevilla | <0.001 | 0.000 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | 0.001 | 0.000 | <0.001 | <0.001 | 0.002 | 0.001 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | 0.005 | | <0.001 | | <0.001 | |

data origin (modelling report & crop no.): 2) EnSa-16-0388, Winter Cereals 1.

**Table 8.8‑10: Tier 1 PECgw for iodosulfuron-methyl-sodium metabolites: BCS-CW81253,**

**AE 0000119, AE F059411**

* **Use: Winter Cereals, 1×3 g a.s./ha, end of winter-spring use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **BCS-CW81253** | | **AE 0000119** | | **AE F059411** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    End of winter to spring application,    3 g a.s./ha ≡  1.5 L prod. /ha | Châteaudun | 0.008 | 0.007 | <0.001 | <0.001 | 0.026 | 0.027 |
| Hamburg | 0.016 | 0.013 | 0.002 | 0.001 | 0.033 | 0.030 |
| Jokioinen | 0.011 | 0.009 | 0.001 | 0.001 | 0.026 | 0.022 |
| Kremsmünster | 0.016 | 0.017 | 0.001 | 0.001 | 0.028 | 0.028 |
| Okehampton | 0.019 | 0.017 | 0.002 | 0.001 | 0.028 | 0.027 |
| Piacenza | 0.013 | 0.013 | 0.001 | 0.001 | 0.026 | 0.027 |
| Porto | 0.009 | 0.010 | <0.001 | <0.001 | 0.018 | 0.018 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | 0.001 | 0.003 |
| Thiva | 0.002 | 0.001 | <0.001 | <0.001 | 0.024 | 0.014 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | <0.001 | | <0.001 | | 0.041 | |

data origin (modelling report & crop no.): 2) EnSa-16-0388, Winter Cereals 1.

**Table 8.8‑11: Tier 1 PECgw for iodosulfuron-methyl-sodium and metabolites: AE F075736, AE F145741**

**– Use: Winter Cereals, 1×2.4 g a.s./ha, autumn use**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **Iodosulfuron-methyl-sodium** | | **AE F075736** | | **AE F145741** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,    2.4 g a.s./ha ≡  1.2 L prod. /ha | Châteaudun | <0.001 | <0.001 | 0.042 | 0.034 | 0.001 | 0.001 |
| Hamburg | <0.001 | <0.001 | 0.114 | 0.129 | 0.008 | 0.011 |
| Jokioinen | <0.001 | <0.001 | 0.148 | 0.147 | 0.018 | 0.021 |
| Kremsmünster | <0.001 | <0.001 | 0.061 | 0.062 | 0.002 | 0.003 |
| Okehampton | <0.001 | <0.001 | 0.099 | 0.115 | 0.005 | 0.007 |
| Piacenza | <0.001 | <0.001 | 0.039 | 0.059 | 0.001 | 0.004 |
| Porto | <0.001 | <0.001 | 0.066 | 0.094 | 0.004 | 0.007 |
| Sevilla | <0.001 | <0.001 | 0.001 | 0.004 | 0.000 | 0.001 |
| Thiva | <0.001 | <0.001 | 0.013 | 0.016 | 0.000 | 0.001 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | <0.001 | | **0.136** | | 0.005 | |

data origin (modelling report & crop no.): 2) EnSa-16-0388, Winter Cereals 2.

**Table 8.8‑12: Tier 1 PECgw for iodosulfuron-methyl-sodium metabolites: AE F145740, AE**

**0002166, AE F161778**

* **Use: Winter Cereals, 1×2.4 g a.s./ha, autumn use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F145740** | | **AE 0002166** | | **AE F161778** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,    2.4 g a.s./ha ≡  1.2 L prod. /ha | Châteaudun | 0.003 | 0.002 | 0.003 | 0.003 | 0.013 | 0.011 |
| Hamburg | 0.005 | 0.005 | 0.026 | 0.038 | 0.028 | 0.030 |
| Jokioinen | 0.004 | 0.004 | 0.051 | 0.058 | 0.031 | 0.025 |
| Kremsmünster | 0.003 | 0.003 | 0.007 | 0.012 | 0.017 | 0.017 |
| Okehampton | 0.005 | 0.005 | 0.013 | 0.017 | 0.022 | 0.022 |
| Piacenza | 0.002 | 0.003 | 0.005 | 0.014 | 0.012 | 0.014 |
| Porto | 0.003 | 0.004 | 0.013 | 0.022 | 0.012 | 0.013 |
| Sevilla | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.001 |
| Thiva | 0.001 | 0.001 | 0.000 | 0.002 | 0.005 | 0.004 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | 0.009 | | 0.003 | | <0.001 | |

data origin (modelling report & crop no.): 2)EnSa-16-0388, Winter Cereals 2.

**Table 8.8‑13: Tier 1 PECgw for iodosulfuron-methyl-sodium metabolites: BCS-CW81253,**

**AE 0000119, AE F059411**

* **Use: Winter Cereals, 1×2.4 g a.s./ha, autumn use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **BCS-CW81253** | | **AE 0000119** | | **AE F059411** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,    2.4 g a.s./ha ≡  1.2 L prod. /ha | Châteaudun | 0.015 | 0.013 | 0.001 | 0.001 | 0.001 | 0.030 |
| Hamburg | 0.025 | 0.023 | 0.004 | 0.004 | 0.008 | 0.032 |
| Jokioinen | 0.019 | 0.014 | 0.002 | 0.001 | 0.018 | 0.024 |
| Kremsmünster | 0.019 | 0.018 | 0.002 | 0.001 | 0.002 | 0.028 |
| Okehampton | 0.021 | 0.019 | 0.003 | 0.002 | 0.005 | 0.022 |
| Piacenza | 0.013 | 0.016 | 0.002 | 0.002 | 0.001 | 0.024 |
| Porto | 0.010 | 0.010 | 0.001 | 0.001 | 0.004 | 0.015 |
| Sevilla | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 |
| Thiva | 0.007 | 0.005 | 0.000 | 0.000 | 0.000 | 0.022 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | <0.001 | | <0.001 | | 0.041 | |

data origin (modelling report & crop no.): 2)EnSa-16-0388, Winter Cereals 2.

**Table 8.8‑14: Tier 1 PECgw for iodosulfuron-methyl-sodium and metabolites: AE F075736,**

**AE F145741**

* **Use: Spring Cereals, 1×2 g a.s./ha, spring use**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **Iodosulfuron-methyl-sodium** | | **AE F075736** | | **AE F145741** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Spring Cereals    spring application,    2 g a.s./ha ≡  1 L prod. /ha | Châteaudun | <0.001 | <0.001 | 0.012 | 0.008 | 0.000 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.063 | 0.032 | 0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | 0.047 | 0.042 | 0.001 | 0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.036 | 0.036 | 0.000 | <0.001 |
| Okehampton | <0.001 | <0.001 | 0.035 | 0.036 | 0.000 | <0.001 |
| Porto | <0.001 | <0.001 | 0.009 | 0.012 | 0.000 | <0.001 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | <0.001 | | 0.041 | | <0.001 | |

data origin (modelling report & crop no.): 2)EnSa-16-0388, Spring Cereals.

**Table 8.8‑15: Tier 1 PECgw for iodosulfuron-methyl-sodium metabolites: AE F145740, AE**

**0002166, AE F161778**

**– Use: Spring Cereals, 1×2 g a.s./ha, spring use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F145740** | | **AE 0002166** | | **AE F161778** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Spring Cereals    spring application,    2 g a.s./ha ≡  1 L prod. /ha | Châteaudun | 0.001 | 0.001 | 0.000 | <0.001 | 0.004 | 0.002 |
| Hamburg | 0.003 | 0.002 | 0.001 | <0.001 | 0.017 | 0.009 |
| Jokioinen | 0.002 | 0.002 | 0.002 | 0.003 | 0.011 | 0.009 |
| Kremsmünster | 0.002 | 0.002 | 0.001 | 0.001 | 0.011 | 0.011 |
| Okehampton | 0.002 | 0.002 | 0.000 | 0.001 | 0.010 | 0.010 |
| Porto | 0.001 | 0.001 | 0.000 | <0.001 | 0.003 | 0.004 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | 0.004 | | <0.001 | | <0.001 | |

data origin (modelling report & crop no.): 2)EnSa-16-0388, Spring Cereals.

**Table 8.8‑16: Tier 1 PECgw for iodosulfuron-methyl-sodium metabolites: BCS-CW81253,**

**AE 0000119, AE F059411**

**– Use: Spring Cereals, 1×2 g a.s./ha, spring use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **BCS-CW81253** | | **AE 0000119** | | **AE F059411** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Spring Cereals    spring application,    2 g a.s./ha ≡  1 L prod. /ha | Châteaudun | 0.003 | 0.002 | 0.000 | 0.000 | 0.013 | 0.011 |
| Hamburg | 0.012 | 0.007 | 0.002 | 0.001 | 0.024 | 0.019 |
| Jokioinen | 0.007 | 0.005 | 0.000 | 0.000 | 0.015 | 0.013 |
| Kremsmünster | 0.012 | 0.012 | 0.001 | 0.001 | 0.019 | 0.018 |
| Okehampton | 0.010 | 0.009 | 0.001 | 0.001 | 0.017 | 0.016 |
| Porto | 0.003 | 0.004 | 0.000 | 0.000 | 0.009 | 0.01 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | <0.001 | | <0.001 | | 0.028 | |

data origin (modelling report & crop no.): 2)EnSa-16-0388, Spring Cereals.

The EU limit value of 0.1 µg/L is exceeded for the relevant metabolite AE F075736 in some of the simulation scenarios (Hamburg, Jokioinen, Okehampton) for autumn application. A Tier 2 simulation was therefore performed to further address this use situation, see presented under point (b).

**(b) Tier 2 PECgw FOCUS PEARL, PELMO and MACRO – based on field DT50** **information on iodosulfuron-methyl-sodium and its metabolite AE F075736**

**Table 8.8‑17: Tier 2 PECgw for iodosulfuron-methyl-sodium and its metabolite AE F075736 – Use: Winter Cereals, 1×2.4 g a.s./ha, autumn use**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | |
| **Iodosulfuron-methyl-sodium** | | **AE F075736** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,    2.4 g a.s./ha ≡  1.2 L prod. /ha | Châteaudun | <0.001 | <0.001 | 0.005 | 0.004 |
| Hamburg | <0.001 | <0.001 | 0.026 | 0.036 |
| Jokioinen | <0.001 | <0.001 | 0.028 | 0.037 |
| Kremsmünster | <0.001 | <0.001 | 0.008 | 0.008 |
| Okehampton | <0.001 | <0.001 | 0.028 | 0.037 |
| Piacenza | <0.001 | <0.001 | 0.005 | 0.013 |
| Porto | <0.001 | <0.001 | 0.019 | 0.035 |
| Sevilla | <0.001 | <0.001 | 0.000 | 0.001 |
| Thiva | <0.001 | <0.001 | 0.001 | 0.002 |
| *addressed via risk envelope: 10 g a.s./ha* |  | **MACRO**2) | | **MACRO**2) | |
| Châteaudun | <0.001 | | 0.028 | |

data origin (modelling report & crop no.): 2)EnSa-16-0414, Winter Cereals (autumn use).

**Groundwater exposure assessment iodosulfuron-methyl-sodium – Overall Conclusion:**

The active substance iodosulfuron-methyl-sodium and its metabolites do not breach the EU threshold value of 0.1 µg/L for the intended uses of the present formulation. The risk for groundwater is acceptable and no relevance assessment in Part B.10 for any of the assessed metabolites is required.

#### Mesosulfuron-methyl and its metabolites

For mesosulfuron-methyl, the exposure assessment may follow a tiered approach as described below, for which dedicated modelling DT50 endpoints were agreed in the EU review.

1. **Tier 1:**

**Tier 1 PECgw for mesosulfuron-methyl** is derived from exposure modelling of the parent active substance alone, based on the technically simple but overly conservative procedure of considering only slow-phase SFO-DT50 where bi-phasic models were used in the original kinetic evaluation. A specific EU endpoint is dedicated to "modelling the parent active substance alone".

**Tier 1 PECgw for metabolites (other than BCS-CV14885)** is derived from a pathway simulation, for conservatism of which the degradation of parent is assumed to proceed faster than in the Tier 1 simulation for the parent active substance alone. This is described by a specific SFO-DT50 EU endpoint dedicated to "modelling the parent active substance and metabolites".

**Tier 1 PECgw for metabolite BCS-CV14885** (detected in lysimeter leachate but not in laboratory soil metabolism studies) is derived from a separate simulation for the system parent active substance – metabolite BCS-CV14885, using the parent EU endpoint dedicated to "modelling the parent active substance and metabolites", and the EU agreed metabolite formation fraction estimate for BCS-CV14885. For dossier simplicity, this simulation is presented as a 'risk envelope' type assessment for the worst case use rate, which conservatively covers all intended European uses of mesosulfuron-methyl.

1. **Tier 2:**

**Tier 2 PECgw simulation for mesosulfuron-methyl** is provided where required to pass leaching assessment. This higher tier assessment is provided for the parent compound alone. The refinement is based on an accurate biphasic implementation of the soil degradation of mesosulfuron-methyl in the exposure models, using the EU agreed k1, k2, and g parameters for a DFOP-based exposure modelling.

1. **Tier 2 - with risk mitigation:**

**Tier 2 PECgw simulation for mesosulfuron-methyl considering risk mitigation.** For uses where further refinement is needed to pass the assessment, calculations considering crop rotation as risk mitigation are presented (application every second year).

For more information on kinetic modelling endpoints, reference is made to the Section 8.3.1.

**Table 8.8‑18: Input parameters related to active substance mesosulfuron-methyl and metabolites for PECgw calculations (Tier 1)**

| **Compound** | **Mesosulfuron-methyl** | **AE F154851** | **AE F160459** | **Value in accordance with EU endpoint y/n/**  **Reference** |
| --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 503.5 | 489.5 | 489.5 | Y/ EFSA Journal 2016;14(10):4584 |
| Water solubility (mg/L): | 483  (20°C, pH 7)\* | 200000 (20°C, pH 7)# | 10000  (20°C, pH 7)# | \*Y/ EFSA Journal 2016;14(10):4584.  #Y/ KCA 2.14/05; KCA 2.14/07; values listed in RAR  Vol 3 – B.8 (PPP) – Atlantis OD  (07/2016) |
| Saturated vapour pressure (Pa): | 3.5 x 10-12  (20°C)\* | 1.7 x 10-8  (20°C) # | 6.8 x 10-8  (20°C) # | \*Y/ EFSA Journal 2016;14(10):4584.  #Y/ KCA 2.14/06; KCA 2.14/08; values listed in RAR  Vol 3 – B.8 (PPP) – Atlantis OD  (07/2016) |
| DT50 in soil (d) | 49.721 / 34.092 (geomean,  normalisation to pF2,  20 °C with Q10 of 2.58, n = 9) | 45.22 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n = 9) | 74.14 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n = 9) | Y/ EFSA Journal 2016;14(10):4584 |
| Transformation rate | Parent ->  AE F154851:  0.0042699  Parent ->  AE F160459:  0.0020943  Parent ->  AE F099095:  0.0008133  Parent ->  AE F092944:  0.0072588  Parent ->  AE F140584:  0.0043106  Parent ->  AE F147447: 0.0017893  Parent -> BCSCV14885: 0.0019520 | AE F154851 -> AE F160460:  0.0153283 | AE F160459 -> AE F160460:  0.0093492 | Output of PELMO calculation |
| Kfoc (mL/g)/Kfom | 64 / 37.1 (geomean, n = 9) | 65.0 / 37.7  (geomean, n = 3) | 19.3 / 11.2  (geomean, n = 5) | Y/EFSA Journal 2016;14(10):4584 |
| 1/n | 0.91 (arithmetic mean, n = 9) | 0.94 (arithmetic mean, n = 3) | 0.941 (arithmetic mean, n = 5) | Y/EFSA Journal 2016;14(10):4584 |
| Plant uptake factor | 0 | 0 | 0 | Y/EFSA Journal 2016;14(10):4584 |
| Formation fraction | - | 0.210 (from parent) | 0.103 (from parent) | Y/EFSA Journal 2016;14(10):4584 |

1. for modelling of parent active substance alone
2. for modelling of metabolites formation from parent

1+2 see headline 'Modelling Endpoints' in Section 8.3.1 of present dRR for explanatory information to the EU agreed procedure of modelling "parent active substance alone" and " parent active substance with metabolites".

**Table 8.8‑19: Input parameters related to active substance mesosulfuron-methyl and me-**

**tabolites for PECgw calculations (Tier 1), continued**

| **Compound** | **AE F099095** | **AE F092944** | **AE F160460** | **Value in accordance with EU endpoint y/n/**  **Reference** |
| --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 198.2 | 155.2 | 475.5 | Y/EFSA Journal 2016;14(10):4584 |
| Water solubility (mg/L) | 190  (20°C, pH 7)# | 5200  (20°C, pH 7) # | 100000 (20°C, pH 7) # | # Y/ KCA 2.14/15;  KCA 2.14/17; KCA  2.14/09; values listed in RAR Vol 3 – B.8 (PPP) – Atlantis OD  (07/2016) |
| Saturated vapour pressure (Pa) | 1.9 x 10-5 (20°C) # | 2.6 x 10-2 (20°C) # | 5.6 x 10-7 (20°C) # | # Y/ KCA 2.14/16; KCA 2.14/18; KCA  2.14/10; values listed in RAR Vol 3 – B.8 (PPP) – Atlantis OD  (07/2016) |
| DT50,soil (d) | 55.6 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n = 12) | 16.93 (geomean, normalisation to pF2, 20 °C with Q10 of  2.58, n = 13) | 28.61 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n = 9) | Y/EFSA Journal 2016;14(10):4584 |
| Transformation rate | AE F099095 ->  BR/CO2: 0.0124667 | AE F092944 ->  BR/CO2: 0.0409419 | AE F160460 ->  BR/CO2:  0.0242274 | Output of PELMO calculation |
| Kfoc (mL/g)/Kfom | 334 / 194 (geomean, n = 11) | 293.9 / 170.5  (geomean, n = 23) | 12.2 / 7.1 (geomean, n = 5) | Y/EFSA Journal 2016;14(10):4584 |
| 1/n | 0.80 (arithmetic mean, n = 11) | 0.74 (arithmetic mean, n = 23) | 0.9 (arithmetic mean, n = 5) | Y/EFSA Journal 2016;14(10):4584 |
| Plant uptake factor | 0 | 0 | 0 | Y/EFSA Journal 2016;14(10):4584 |
| Formation fraction | 0.040 (from parent) | 0.357 (from parent) | 1 (from  AE F154851)  1 (from  AE F160459) | Y/EFSA Journal 2016;14(10):4584 |

**Table 8.8‑20: Input parameters related to active substance mesosulfuron-methyl and me-tabolites for PECgw calculations (Tier 1), continued**

| **Compound** | **AE F140584** | **AE F147447** | **BCS-CV14885** | **Value in accordance with EU endpoint y/n/**  **Reference** |
| --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 322.4 | 290.3 | 393.4 | Y/EFSA Journal 2016;14(10):4584 |
| Water solubility (mg/L) | 100  (20°C, pH 7)# | 150000 (20°C, pH 7) # | 2000  (20°C, pH 7) # | #Y/ KCA 2.14/11;  KCA 2.14/13; KCA  2.14/19; values listed in RAR Vol 3 – B.8 (PPP) – Atlantis OD  (07/2016) |
| Saturated vapour pressure (Pa) | 1.3 x 10-6  (20°C) # | 1.0 x 10-8  (20°C) # | 7.4 x 10-10  (20°C) # | #Y/ KCA 2.14/12;  KCA 2.14/14; KCA  2.14/20; values listed in RAR Vol 3 – B.8 (PPP) – Atlantis OD  (07/2016) |
| DT50,soil (d) | 4.22 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n = 13) | 102.15 (geomean, normalisation to pF2, 20 °C with Q10 of  2.58, n = 13) | 97.6 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n = 4) | Y/EFSA Journal 2016;14(10):4584 |
| Transformation rate | AE F140584 ->  BR/CO2: 0.1642529 | AE F147447 ->  BR/CO2: 0.0067856 | BCS-CV14885 ->  BR/CO2:  0.0071019 | Output of PELMO calculation |
| Kfoc (mL/g)/Kfom | 0 / 0 (default) | 5.1 / 2.9 (geomean, n = 5) | 17.7 / 10.3  (geomean, n = 4) | Y/EFSA Journal 2016;14(10):4584 |
| 1/n | 1.0 (default) | 1.0 (default) | 1.21 (arithmetic mean, n = 4) | Y/EFSA Journal 2016;14(10):4584 |
| Plant uptake factor | 0 | 0 | 0 | Y/EFSA Journal 2016;14(10):4584 |
| Formation fraction | 0.212 (from parent) | 0.088 (from parent) | 0.096 (from parent) | Y/EFSA Journal 2016;14(10):4584 |

**Table 8.8‑21: Input parameters related to active substance mesosulfuron-methyl for PECgw calculations (Tier 2)**

|  |  |  |
| --- | --- | --- |
| **Compound** | **Mesosulfuron-methyl** | **Value in accordance with EU endpoint y/n/**  **Reference** |
| Molecular weight (g/mol) | 503.5 | Y/EFSA Journal 2016;14(10):4584 |
| Water solubility (mg/L) | 483 (20°C, pH 7) | Y/EFSA Journal 2016;14(10):4584 |
| Saturated vapour pressure (Pa) | 3.5 x 10-[[3]](#footnote-3)2 (20°C) | Y/EFSA Journal 2016;14(10):4584 |
| DT50,soil (d) | DFOP1:  DT50 fast phase =13.19 / DT50 slow phase =49.72/g = 0.375  (geomean, normalisation to pF2,  20 °C with Q10 of 2.58, n = 9) | Y/EFSA Journal 2016;14(10):4584;    geomean DT50 calculation from listed individual k-values see headline 'Modelling  Endpoints' in  Section 8.3.1 of present dRR. |
| Transformation rate | Parent\_fast -> BR/CO2: 0.05255 Parent\_slow -> BR/CO2: 0.01394 | Output of PELMO calculation |
| Kfoc (mL/g)/Kfom | 64 / 37.1 (geomean, n = 9) | Y/EFSA Journal 2016;14(10):4584 |
| 1/n | 0.91  (arithmetic mean, n = 9) | Y/EFSA Journal 2016;14(10):4584 |
| Plant uptake factor | 0 | Y/EFSA Journal 2016;14(10):4584 |
| Formation fraction | - | Y/EFSA Journal 2016;14(10):4584 |

**(a) Tier 1 PECgw FOCUS PEARL, PELMO and MACRO**

**– parent substance alone, and metabolites**

**Table 8.8‑22: Tier 1 PECgw for mesosulfuron-methyl, and metabolites: AE F154851, AE**

**F160459**

**– Use: Winter Cereals, 1×15 g a.s./ha, end of winter to spring use**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **mesosulfuron-methyl §** | | **AE F154851 #** | | **AE F160459 #/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    End of winter to spring application,    15 g a.s./ha ≡  1.5 L prod. /ha | Châteaudun | 0.019 | 0.015 | 0.013 | 0.010 | 0.122 | 0.120 |
| Hamburg | **0.113** | 0.102 | 0.056 | 0.050 | 0.221 | 0.206 |
| Jokioinen | 0.042 | 0.043 | 0.026 | 0.026 | 0.227 | 0.202 |
| Kremsmünster | 0.080 | 0.074 | 0.041 | 0.038 | 0.143 | 0.155 |
| Okehampton | **0.124** | 0.115 | 0.057 | 0.054 | 0.144 | 0.141 |
| Piacenza | 0.055 | 0.055 | 0.027 | 0.029 | 0.097 | 0.112 |
| Porto | 0.050 | 0.072 | 0.025 | 0.033 | 0.098 | 0.102 |
| Sevilla | 0.000 | 0.000 | 0.000 | 0.000 | 0.037 | 0.043 |
| Thiva | 0.008 | 0.003 | 0.005 | 0.003 | 0.102 | 0.065 |
|  | **MACRO1)** | | **MACRO3)** | | **MACRO3)** | |
| Châteaudun | 0.019 | | 0.012 | | **0.109** | |

data origin (modelling report & crop no.):

1) EnSa-17-0435, Winter Cereals 1. / 3) EnSa-17-0436, Winter Cereals 1.

§ simulation based on procedure Tier 1 - parent substance alone.

# simulation based on procedure Tier 1 - parent with metabolites; parent results not shown here

& simulation based on procedure Tier 1 - risk envelope for BCS-CV14885

\*) Metabolite non-relevance is demonstrated in Part B Section 10

**Table 8.8‑23: Tier 1 PECgw for mesosulfuron-methyl metabolites: AE F099095, AE F092944,**

**AE F160460**

**– Use: Winter Cereals, 1×15 g a.s./ha, end of winter to spring use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F099095 #** | | **AE F092944 #** | | **AE F160460 #/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    End of winter to spring application,    15 g a.s./ha ≡  1.5 L prod. /ha | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | **0.150** | **0.144** |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 | **0.312** | **0.297** |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 | **0.301** | **0.282** |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 | **0.191** | **0.200** |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 | **0.206** | **0.202** |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | **0.136** | **0.152** |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | **0.130** | **0.152** |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | 0.033 | 0.048 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | 0.101 | 0.071 |
|  | **MACRO4)** | | **MACRO4)** | | **MACRO3)** | |
| Châteaudun | <0.001 | | <0.001 | | 0.006 | |

data origin (modelling report & crop no.):

3) EnSa-17-0436, Winter Cereals 1. / 4) EnSa-17-0437, Winter Cereals 1.

§ simulation based on procedure Tier 1 - parent substance alone.

# simulation based on procedure Tier 1 - parent with metabolites; parent results not shown here

& simulation based on procedure Tier 1 - risk envelope for BCS-CV14885

\*) Metabolite non-relevance is demonstrated in Part B Section 10

**Table 8.8‑24: Tier 1 PECgw for mesosulfuron-methyl metabolites: AE F140584, AE F147447,**

**BCS-CV14885**

**– Use: Winter Cereals, 1×15 g a.s./ha, end of winter to spring use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F140584 #** | | **AE F147447 #/\*** | | **BCS-CV14885 &/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    End of winter to spring application,    15 g a.s./ha ≡  1.5 L prod. /ha | Châteaudun | 0.001 | 0.001 | **0.213** | **0.197** | **0.316** | **0.280** |
| Hamburg | 0.011 | 0.011 | **0.268** | **0.220** | **0.402** | **0.327** |
| Jokioinen | 0.021 | 0.029 | **0.401** | **0.302** | **0.607** | **0.471** |
| Kremsmünster | 0.003 | 0.004 | **0.147** | **0.171** | **0.219** | **0.255** |
| Okehampton | 0.005 | 0.007 | **0.143** | **0.137** | **0.215** | **0.201** |
| Piacenza | 0.002 | 0.003 | **0.131** | **0.159** | **0.197** | **0.229** |
| Porto | 0.004 | 0.008 | **0.127** | **0.126** | **0.187** | **0.182** |
| Sevilla | 0.000 | 0.001 | 0.088 | 0.086 | **0.129** | **0.123** |
| Thiva | 0.000 | 0.000 | 0.200 | 0.142 | **0.288** | **0.196** |
|  | **MACRO3)** | | **MACRO3)** | | **MACRO5)** | |
| Châteaudun | 0.001 | | **0.185** | | **0.274** | |

data origin (modelling report & crop no.):

3) EnSa-17-0436, Winter Cereals 1. / 5) EnSa-17-0145, Winter cereals (spring).

§ simulation based on procedure Tier 1 - parent substance alone.

# simulation based on procedure Tier 1 - parent with metabolites; parent results not shown here

& simulation based on procedure Tier 1 - risk envelope for BCS-CV14885

\*) Metabolite non-relevance is demonstrated in Part B Section 10

The EU limit value of 0.1 µg/L is exceeded for mesosulfuron-methyl parent active substance in some of the simulation scenarios for end of winter-spring application. A Tier 2 simulation was therefore performed to further address this use situation, see presented later under point (b).

\*\*\*\*\*\*

**Table 8.8‑25: Tier 1 PECgw for mesosulfuron-methyl, and metabolites: AE F154851, AE**

**F160459**

**– Use: Winter Cereals, 1×12 g a.s./ha, autumn use**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **mesosulfuron-methyl §** | | **AE F154851 #** | | **AE F160459 #/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,     1. g a.s./ha ≡   1.2 L prod. /ha | Châteaudun | 0.030 | 0.024 | 0.017 | 0.014 | 0.120 | 0.118 |
| Hamburg | 0.140 | 0.135 | 0.062 | 0.058 | 0.189 | 0.178 |
| Jokioinen | 0.051 | 0.057 | 0.029 | 0.030 | 0.195 | 0.174 |
| Kremsmünster | 0.076 | 0.072 | 0.037 | 0.036 | 0.120 | 0.129 |
| Okehampton | 0.157 | 0.148 | 0.062 | 0.059 | 0.133 | 0.130 |
| Piacenza | 0.073 | 0.079 | 0.030 | 0.034 | 0.091 | 0.100 |
| Porto | 0.082 | 0.129 | 0.035 | 0.050 | 0.093 | 0.094 |
| Sevilla | 0.000 | 0.000 | 0.000 | 0.001 | 0.027 | 0.036 |
| Thiva | 0.010 | 0.007 | 0.007 | 0.005 | 0.109 | 0.077 |
|  | **MACRO1)** | | **MACRO3)** | | **MACRO3)** | |
| Châteaudun | 0.029 | | 0.016 | | **0.105** | |

data origin (modelling report & crop no.):

1) EnSa-17-0432, Winter Cereals 2. 3) EnSa-17-0433, Winter Cereals 2.

§ simulation based on procedure Tier 1 - parent substance alone.

# simulation based on procedure Tier 1 - parent with metabolites; parent results not shown here

& simulation based on procedure Tier 1 - risk envelope for BCS-CV14885

\*) Metabolite non-relevance is demonstrated in Part B Section 10

**Table 8.8‑26: Tier 1 PECgw for mesosulfuron-methyl metabolites: AE F099095, AE F092944,**

**AE F160460**

**– Use: Winter Cereals, 1×12 g a.s./ha, autumn use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F099095 #** | | **AE F092944 #** | | **AE F160460 #/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,     1. g a.s./ha ≡   1.2 L prod. /ha | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | **0.145** | **0.143** |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 | **0.264** | **0.257** |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 | **0.254** | **0.239** |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 | **0.160** | **0.168** |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 | **0.177** | **0.173** |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | **0.113** | **0.127** |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | **0.125** | **0.132** |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | 0.029 | 0.040 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | **0.111** | 0.083 |
|  | **MACRO4)** | | **MACRO4)** | | **MACRO3)** | |
| Châteaudun | <0.001 | | <0.001 | | 0.015 | |

data origin (modelling report & crop no.):

3) EnSa-17-0433, Winter Cereals 2. / 4) EnSa-17-0434, Winter Cereals 2.

§ simulation based on procedure Tier 1 - parent substance alone.

* + parent with metabolites; parent results not shown here
  + risk envelope for BCS-CV14885 -relevance is demonstrated in Part Section 10

**Table 8.8‑27: Tier 1 PECgw for mesosulfuron-methyl metabolites: AE F140584, AE F147447,**

**BCS-CV14885**

**– Use: Winter Cereals, 1×12 g a.s./ha, autumn use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F140584 #** | | **AE F147447 #/\*** | | **BCS-CV14885 &/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,    12 g a.s./ha ≡  1.2 L prod. /ha | Châteaudun | 0.002 | 0.003 | **0.183** | **0.171** | **0.272** | **0.243** |
| Hamburg | 0.018 | 0.027 | **0.211** | **0.194** | **0.317** | **0.292** |
| Jokioinen | 0.041 | 0.06 | **0.327** | **0.252** | **0.495** | **0.398** |
| Kremsmünster | 0.003 | 0.005 | **0.120** | **0.141** | **0.180** | **0.209** |
| Okehampton | 0.013 | 0.017 | **0.118** | **0.113** | **0.177** | **0.168** |
| Piacenza | 0.003 | 0.008 | **0.113** | **0.132** | **0.169** | **0.190** |
| Porto | 0.011 | 0.025 | **0.100** | **0.105** | **0.147** | **0.153** |
| Sevilla | 0.000 | 0.001 | 0.076 | 0.077 | **0.113** | **0.110** |
| Thiva | 0.001 | 0.001 | 0.181 | 0.130 | 0.265 | 0.186 |
|  | **MACRO3)** | | **MACRO3)** | | **MACRO**5) | |
| Châteaudun | 0.002 | | **0.168** | | 0.306 | |

data origin (modelling report & crop no.):

3) EnSa-17-0433, Winter Cereals 2. / 5) EnSa-17-0145, Winter cereals (autumn).

§ simulation based on procedure Tier 1 - parent substance alone.

# simulation based on procedure Tier 1 - parent with metabolites; parent results not shown here

& simulation based on procedure Tier 1 - risk envelope for BCS-CV14885

\*) Metabolite non-relevance is demonstrated in Part B Section 10

The EU limit value of 0.1 µg/L is exceeded for mesosulfuron-methyl parent active substance in some of the simulation scenarios for autumn application. A Tier 2 simulation was therefore performed to further address this use situation, see presented later under point (b).

\*\*\*\*\*\*

**Table 8.8‑28: Tier 1 PECgw for mesosulfuron-methyl, and metabolites: AE F154851, AE**

**F160459**

**– Use: Winter Cereals, 1×10 g a.s./ha, autumn use**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **mesosulfuron-methyl §** | | **AE F154851 #** | | **AE F160459 #/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,    10 g a.s./ha ≡  1L prod. /ha | Châteaudun | 0.023 | 0.018 | 0.013 | 0.011 | 0.099 | 0.097 |
| Hamburg | 0.111 | 0.107 | 0.050 | 0.047 | 0.156 | 0.147 |
| Jokioinen | 0.040 | 0.045 | 0.023 | 0.024 | 0.160 | 0.143 |
| Kremsmünster | 0.060 | 0.057 | 0.030 | 0.029 | 0.099 | 0.107 |
| Okehampton | 0.125 | 0.118 | 0.050 | 0.048 | 0.110 | 0.108 |
| Piacenza | 0.058 | 0.062 | 0.024 | 0.028 | 0.075 | 0.083 |
| Porto | 0.066 | 0.104 | 0.029 | 0.041 | 0.076 | 0.077 |
| Sevilla | 0.000 | 0.000 | 0.000 | 0.000 | 0.022 | 0.030 |
| Thiva | 0.008 | 0.005 | 0.005 | 0.004 | 0.090 | 0.063 |
|  | **MACRO1)** | | **MACRO3)** | | **MACRO3)** | |
| Châteaudun | 0.023 | | 0.013 | | 0.085 | |

data origin (modelling report & crop no.):

1) EnSa-17-0432, Winter Cereals 3. / 3) EnSa-17-0433, Winter Cereals 3.

§ simulation based on procedure Tier 1 - parent substance alone.

* + parent with metabolites; parent results not shown here
  + risk envelope for BCS-CV14885 -relevance is demonstrated in Part B Section 10

**Table 8.8‑29: Tier 1 PECgw for mesosulfuron-methyl metabolites: AE F099095, AE F092944, AE F160460**

**– Use: Winter Cereals, 1×10 g a.s./ha, autumn use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F099095 #** | | **AE F092944 #** | | **AE F160460 #/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,    10 g a.s./ha ≡  1L prod. /ha | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | 0.119 | 0.117 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 | 0.217 | 0.211 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 | 0.207 | 0.194 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 | 0.131 | 0.138 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 | 0.146 | 0.143 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | 0.093 | 0.105 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | 0.102 | 0.109 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | 0.023 | 0.032 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | 0.090 | 0.068 |
|  | **MACRO**4) | | **MACRO**4) | | **MACRO3)** | |
| Châteaudun | <0.001 | | <0.001 | | 0.012 | |

data origin (modelling report & crop no.):

3) EnSa-17-0433, Winter Cereals 3. / 4) EnSa-17-0434, Winter Cereals 3.

§ simulation based on procedure Tier 1 - parent substance alone.

* + parent with metabolites; parent results not shown here
  + risk envelope for BCS-CV14885 -relevance is demonstrated in Part Section 10

**Table 8.8‑30: Tier 1 PECgw for mesosulfuron-methyl metabolites: AE F140584, AE F147447,**

**BCS-CV14885**

**– Use: Winter Cereals, 1×10 g a.s./ha, autumn use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F140584 #** | | **AE F147447 #/\*** | | **BCS-CV14885 &/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Winter Cereals    autumn  application,    10 g a.s./ha ≡  1L prod. /ha | Châteaudun | 0.002 | 0.002 | 0.152 | 0.142 | 0.227 | 0.203 |
| Hamburg | 0.015 | 0.023 | 0.175 | 0.162 | 0.265 | 0.244 |
| Jokioinen | 0.034 | 0.050 | 0.272 | 0.210 | 0.414 | 0.334 |
| Kremsmünster | 0.003 | 0.004 | 0.100 | 0.117 | 0.150 | 0.175 |
| Okehampton | 0.010 | 0.014 | 0.098 | 0.094 | 0.147 | 0.140 |
| Piacenza | 0.003 | 0.007 | 0.094 | 0.110 | 0.141 | 0.158 |
| Porto | 0.009 | 0.021 | 0.083 | 0.088 | 0.122 | 0.128 |
| Sevilla | 0.000 | 0.001 | 0.063 | 0.064 | 0.095 | 0.092 |
| Thiva | 0.000 | 0.001 | 0.151 | 0.108 | 0.221 | 0.155 |
|  | **MACRO3)** | | **MACRO3)** | | **MACRO**5) | |
| Châteaudun | 0.002 | | **0.138** | | 0.306 | |

data origin (modelling report & crop no.):

3) EnSa-17-0433, Winter Cereals 3. 5) EnSa-17-0145, Winter cereals (autumn).

§ simulation based on procedure Tier 1 - parent substance alone.

* parent with metabolites; parent results not shown here
* risk envelope for BCS-CV14885 -relevance is demonstrated in Part B Section 10

\*\*\*\*\*\*

**Table 8.8‑31: Tier 1 PECgw for mesosulfuron-methyl, and metabolites: AE F154851, AE**

**F160459**

**– Use: Spring Cereals, 1×10 g a.s./ha, spring use**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **mesosulfuron-methyl §** | | **AE F154851 #** | | **AE F160459 #/\*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Spring Cereals    Spring application,    10 g a.s./ha ≡  1L prod. /ha | Châteaudun | 0.008 | 0.005 | 0.006 | 0.004 | 0.071 | 0.062 |
| Hamburg | 0.075 | 0.062 | 0.038 | 0.032 | 0.185 | 0.138 |
| Jokioinen | 0.025 | 0.024 | 0.016 | 0.015 | 0.126 | 0.120 |
| Kremsmünster | 0.054 | 0.052 | 0.027 | 0.027 | 0.102 | 0.106 |
| Okehampton | 0.062 | 0.061 | 0.031 | 0.030 | 0.096 | 0.092 |
| Porto | 0.022 | 0.037 | 0.013 | 0.020 | 0.060 | 0.063 |
|  | **MACRO1)** | | **MACRO**3) | | **MACRO**3) | |
| Châteaudun | 0.009 | | 0.006 | | 0.061 | |

data origin (modelling report & crop no.):

1) EnSa-17-0444, Spring Cereals 3. 3) EnSa-17-0445, Spring Cereals 3.

§ simulation based on procedure Tier 1 - parent substance alone.

# simulation based on procedure Tier 1 - parent with metabolites; parent results not shown here

& simulation based on procedure Tier 1 - risk envelope for BCS-CV14885

\*) Metabolite non-relevance is demonstrated in Part B Section 10

**Table 8.8‑32: Tier 1 PECgw for mesosulfuron-methyl metabolites: AE F099095, AE F092944,**

**AE F160460**

**– Use: Spring Cereals, 1×10 g a.s./ha, spring use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F099095 #** | | **AE F092944 #** | | **AE F160460 # \*** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Spring Cereals    Spring  application,    10 g a.s./ha ≡  1L prod. /ha | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | 0.087 | 0.073 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 | 0.251 | 0.198 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 | 0.173 | 0.163 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 | 0.135 | 0.135 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 | 0.136 | 0.133 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | 0.088 | 0.095 |
|  | **MACRO**4) | | **MACRO**4) | | **MACRO**3) | |
| Châteaudun | <0.001 | | <0.001 | | 0.003 | |

data origin (modelling report & crop no.):

3) EnSa-17-0445, Spring Cereals 3. / 4) EnSa-17-0446 Spring Cereals 3.

§ simulation based on procedure Tier 1 - parent substance alone.

# simulation based on procedure Tier 1 - parent with metabolites; parent results not shown here

& simulation based on procedure Tier 1 - risk envelope for BCS-CV14885

\*) Metabolite non-relevance is demonstrated in Part B Section 10

**Table 8.8‑33: Tier 1 PECgw for mesosulfuron-methyl metabolites: AE F140584, AE F147447,**

**BCS-CV14885**

**– Use: Spring Cereals, 1×10 g a.s./ha, spring use (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | | | | | |
| **AE F140584 #** | | **AE F147447 #/\*** | | **BCS-CV14885 &** | |
| **PEARL** | **PELMO** | **PEARL** | **PELMO** | **PEARL** | **PELMO** |
| Spring Cereals    Spring  application,    10 g a.s./ha ≡  1L prod. /ha | Châteaudun | 0.001 | 0.001 | 0.110 | 0.101 | 0.162 | 0.144 |
| Hamburg | 0.010 | 0.007 | 0.229 | 0.149 | 0.347 | 0.219 |
| Jokioinen | 0.015 | 0.020 | 0.214 | 0.185 | 0.343 | 0.294 |
| Kremsmünster | 0.002 | 0.003 | 0.109 | 0.116 | 0.161 | 0.171 |
| Okehampton | 0.003 | 0.004 | 0.094 | 0.087 | 0.144 | 0.128 |
| Porto | 0.002 | 0.004 | 0.077 | 0.072 | 0.118 | 0.106 |
|  | **MACRO**3) | | **MACRO**3) | | **MACRO**5) | |
| Châteaudun | 0.001 | | 0.096 | | **0.210** | |

data origin (modelling report & crop no.):

3) EnSa-17-0445, Spring Cereals 3. 5) EnSa-17-0145, Spring Cereals.

§ simulation based on procedure Tier 1 - parent substance alone.

# simulation based on procedure Tier 1 - parent with metabolites; parent results not shown here

& simulation based on procedure Tier 1 - risk envelope for BCS-CV14885

\*) Metabolite non-relevance is demonstrated in Part B Section 10

In the Tier 1 simulation for spring use in spring cereals, PECgw of mesosulfuron-methyl does not exceed the parametric threshold value of 0.1 µg/L for any FOCUS scenario. Therefore, the risk to groundwater with regard to mesosulfuron-methyl is acceptable for this intended use of the present formulation.

**(b) Tier 2 PECgw FOCUS PEARL and PELMO - considering biphasic kinetics**

**- parent substance alone**

In the Tier 1 simulation, PECgw of mesosulfuron-methyl exceeded the parametric threshold value of

0.1 µg/L in some FOCUS scenarios for the end of winter–spring and the autumn application. Therefore, a refined assessment is provided below to further address these use situations, based on an implementation of the observed biphasic degradation in the exposure modelling.

**Table 8.8‑34: Tier 2 PECgw for mesosulfuron-methyl**

**– Use: Winter Cereals, 1×15 g a.s./ha, end of winter-spring use**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | |
| **mesosulfuron-methyl §** | |
| **PEARL** | **PELMO** |
| Winter cereals,    end of winter-spring application    15 g a.s./ha ≡  1.5 L prod. /ha | Châteaudun | 0.013 | 0.010 |
| Hamburg | 0.075 | 0.067 |
| Jokioinen | 0.028 | 0.029 |
| Kremsmünster | 0.053 | 0.049 |
| Okehampton | 0.081 | 0.076 |
| Piacenza | 0.036 | 0.037 |
| Porto | 0.033 | 0.047 |
| Sevilla | <0.001 | 0.000 |
| Thiva | 0.005 | 0.002 |

§ simulation based on procedure Tier 2 (biphasic kinetics)

**Table 8.8‑35: Tier 2 PECgw for mesosulfuron-methyl**

**– Use: Winter Cereals, 1×12 g a.s./ha, autumn use**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | |
| **mesosulfuron-methyl §** | |
| **PEARL** | **PELMO** |
| Winter cereals,    autumn  application     1. g a.s./ha ≡   1.2 L prod. /ha | Châteaudun | 0.020 | 0.016 |
| Hamburg | 0.093 | 0.090 |
| Jokioinen | 0.034 | 0.039 |
| Kremsmünster | 0.050 | 0.048 |
| Okehampton | **0.103** | 0.098 |
| Piacenza | 0.048 | 0.053 |
| Porto | 0.054 | 0.085 |
| Sevilla | <0.001 | 0.001 |
| Thiva | 0.007 | 0.005 |

§ simulation based on procedure Tier 2 (biphasic kinetics)

**Table 8.8‑36: Tier 2 PECgw for mesosulfuron-methyl**

**– Use: Winter Cereals, 1×10 g a.s./ha, autumn use**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** | |
| **mesosulfuron-methyl §** | |
| **PEARL** | **PELMO** |
| Winter cereals,    autumn  application    10 g a.s./ha ≡  1.0 L prod. /ha | Châteaudun | 0.016 | 0.013 |
| Hamburg | 0.074 | 0.072 |
| Jokioinen | 0.027 | 0.030 |
| Kremsmünster | 0.040 | 0.038 |
| Okehampton | 0.083 | 0.078 |
| Piacenza | 0.038 | 0.042 |
| Porto | 0.043 | 0.068 |
| Sevilla | <0.001 | 0.000 |
| Thiva | 0.005 | 0.004 |

§ simulation based on procedure Tier 2 (biphasic kinetics)

For the end of winter to spring use at 15 g a.s./ha (1.5 L product/ha), PECgw of mesosulfuron-methyl in the refined Tier 2 simulation does not exceed the parametric threshold value of 0.1 µg/L for any FOCUS scenario. Therefore, the risk to groundwater with regard to mesosulfuron-methyl is acceptable for that intended use of the present formulation.

For autumn applications, Tier 2 simulation indicated that

* a use rate of 10 g a.s./ha (1 L product/ha) will not lead into exceedances of the threshold value of 0.1 µg/L for any FOCUS scenario.
* a use rate of 12 g a.s./ha (1.2 L product/ha) value resulted in a breach of the threshold value in FOCUS scenario Okehampton. In countries to which this particular scenario is relevant, measures for exposure mitigation will need to be implemented. An additional simulation considering a product use only every second year as mitigation option is provided below.

**(c) Tier 2 PECgw FOCUS PEARL and PELMO - considering biphasic kinetics and mitigation option: use only every second year**

**- parent substance alone**

**Table 8.8‑37: Tier 2 PECgw for mesosulfuron-methyl**

**– Use: Winter Cereals, 1×12 g a.s./ha, autumn use,**

**considering mitigation option: product use every second year**

|  |  |  |
| --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECgw at 1 m Soil Depth (µg/L)** |
| **mesosulfuron-methyl §** |
| **PEARL** |
| Winter cereals,    autumn application    12 g a.s./ha ≡ 1.2 L prod. /ha  every second year | Châteaudun | 0.008 |
| Hamburg | 0.048 |
| Jokioinen | 0.015 |
| Kremsmünster | 0.025 |
| Okehampton | 0.048 |
| Piacenza | 0.027 |
| Porto | 0.027 |
| Sevilla | 0.000 |
| Thiva | 0.003 |

§ simulation based on procedure Tier 2 (biphasic kinetics)

**Groundwater Exposure Mesosulfuron-methyl – Overall Conclusions:**

* For the intended uses end of winter to spring in winter cereals at 15 g a.s./ha, and spring use in spring cereals at 10 g a.s./ha, the parent active substance mesosulfuron-methyl does not reach or exceed the EU threshold value of 0.1 µg/L for any of the FOCUS groundwater scenarios.
* For the intended use timing in autumn considering an application rate of 10 g a.s./ha, the parent active substance mesosulfuron-methyl does not reach or exceed the EU threshold value of 0.1 µg/L for any FOCUS groundwater scenario.
* For the intended use timing in autumn considering an application rate of 12 g a.s./ha, the threshold value is breached in 1/9 FOCUS groundwater scenarios: Okehampton. In countries to which this particular scenario is relevant, exposure mitigation via product label restriction for use only every second year is proposed to resolve the groundwater exposure assessment.

For metabolites AE F160459, AE F160460, AE F147447, and BCS-CV14885 an assessment of metabolite relevance in groundwater is triggered by the simulated PECgw values, and accordingly presented in dRR Section 10. For these compounds the toxicological relevance for groundwater was assessed in the EU peer review, and non-relevance was agreed.

**Table 8.8‑38: Result overview of PECgw simulations presented for mesosulfuron-methyl and its metabolites, for the intended uses of product IMS+MSM+MPR OD 42 (2+10+30)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Mesosulfuron-methyl** | **AE F154851** | **AE F160459** | **AE F099095** | **AE F092944** | **AE F160460** | **AE F140584** | **AE F147447** | **BCS-CV 14885** |
| **winter cereals, end of winter use, 15 g/ha = 1.5 L prod./ha** | | | | | |  |  |  |  |
| Tier 1 | >0.1 µg/L |  | > 0.1 µg/L # |  |  | > 0.1 µg/L # |  | > 0.1 µg/L # | > 0.1 µg/L # |
| Tier 2 |  | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. |
| **winter cereals, autumn use, 12 g/ha = 1.2 L prod./ha** | | | | | |  |  |  |  |
| Tier 1 | >0.1 µg/L |  | > 0.1 µg/L # |  |  | > 0.1 µg/L # |  | > 0.1 µg/L # | > 0.1 µg/L # |
| Tier 2 | >0.1 µg/L  (Okehampton) | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. |
| Tier 2, 2yr |  | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. |
| **winter cereals, autumn use, 10 g/ha = 1 L prod./ha** | | | | | |  |  |  |  |
| Tier 1 | >0.1 µg/L |  | > 0.1 µg/L # |  |  | > 0.1 µg/L # |  | > 0.1 µg/L # | > 0.1 µg/L # |
| Tier 2 |  | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. | n.c. |
| **spring cereals, spring use, 10 g/ha = 1 L prod./ha** | | | | | |  |  |  |  |
| Tier 1 |  |  | > 0.1 µg/L # |  |  | > 0.1 µg/L # |  | > 0.1 µg/L # | > 0.1 µg/L # |

 = <0.1 µg/L all scenarios n.c. = not calculated

# toxicological relevance addressed in Part B.10 – non-relevance has been agreed in EU peer review.

#### Mefenpyr-diethyl and its metabolites

Table 8.8‑39: Input parameters related to active substance mefenpyr-diethyl for PECgw calculations

| Compound | Mefenpyr-diethyl | AE F113225 | AE F094270 | AE 2211046 | Value in accordance with EU endpoint y/n/  Reference\* |
| --- | --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 373.3 | 345.2 | 271.1 | 391.26 | Mefenpyr-diethyl DAR |
| Water solubility (mL/g): | 20 at 20°C  40 at 30°C (PELMO) | 5.826 | 50.0 | 1000 |
| Saturated vapour pressure (Pa): | 6.3.10-6 at 20°C  2.5.10-5 at 30°C (PELMO) | 0 | 0 | 1E-10 |
| DT50 in soil (d) | 2.4 (lab. geometric mean, n=5) | 6.1 (lab. geometric mean, n=5) | 19.6 (field geometric mean, n=3) | 35.5 in 1st horizon (from photodegradation);  1000 in deeper horizons (conservative value) |
| Transformation rate | Parent 🡪 CO2: 0.069315 | Parent 🡪 AE F113225: 0.219497 | AE F113225🡪 AE F094270: 0.1136  AE F094270 🡪 CO2: 0.03537 | - |
| Kfoc (mL/g)/Kfom | 609.9 / 353.77 (geometric mean, n=6) | 109.5 / 63.52 (geometric mean, n=3) | 176.8 / 102.55 (geometric mean, n=5) | 1320 / 765.66 (QSAR) |
| 1/n | 1.085 | 0.920 | 0.928 | 1 |
| Plant uptake factor | 0 | 0 | 0 | 0 |
| Formation fraction | - | 0.76 from parent | 1 from AE F113225 | 0.11 from parent (Modelled as parent) |

\* Delete row in case of no pH dependency

Table 8.8‑40: PECgw for mefenpyr-diethyl and metabolites AE F113225, AE F094270 and AE 2211046 using PEARL 5.5.5.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crop | Scenario | 80th Percentile PECgw at 1 m Soil Depth (μg/L) | | | |
| Mefenpyr-diethyl | AE F113225 | AE F094270 | AE 2211046 |
| Winter cereals, autumn application | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 |
| Winter cereals, spring application | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 |
| Spring cereals | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 |

Table 8.8‑41: PECgw for mefenpyr-diethyl and metabolites AE F113225, AE F094270 and AE 2211046 using PELMO 6.6.4

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crop | Scenario | 80th Percentile PECgw at 1 m Soil Depth (μg/L) | | | |
| Mefenpyr-diethyl | AE F113225 | AE F094270 | AE 2211046 |
| Winter cereals, autumn application | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 |
| Winter cereals, spring application | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 |
| Spring cereals | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 |

The predicted concentration of mefenpyr-diethyl and its metabolites are below 0.1 µg/L for all scenarios for uses on winter and spring cereals. No unacceptable risk of groundwater contamination for mefenpyr-diethyl and its metabolites is posed for all intended uses.

**ZRMS comments:**

**Iodosulfuron-methyl-sodium**

Evaluator agrees with modelling carried out by applicant for the active substance iodosulfuron-methyl-sodium and its metabolite. PECgw has been calculated according to the GAP using the models FOCUS PELMO6.6.4., FOCUS PEARL 4.4.4 and using the input parameters established in the EU reviews: iodosulfuron-methyl-sodium (EFSA Journal 2016;14(4):4453 and in accordance with current guidance (Generic Groundwater Guidance, v. 2.2, May 2014).The PECgw for iodosulfuron-methyl-sodium and metabolites AE F145741, AE F145740, AE 0002166, AE F161778, BCS-CW81253, AE 0000119 and AE F059411 in Tier 1 do not exceed the EU threshold value of 0.1 µg/L for the intended uses of the present formulation. The PECgw for metabolite AE F075736 exceed 0.1 µg/L in some scenarios, thus triggering a Tier 2 assessment. In Tier 2, soil degradation kinetics for parent a.s. and metabolite AE F075736 were based on the geomean of field soil dissipation study data, instead of the laboratory studies considered in Tier 1. The PECgw for the metabolite AE F075736 in Tier 2 are <0.1 µg/L in all scenarios.

After High Tier refinements all PECgw were lower than 0.1 µg/L for iodosulfuron and its metabolites at BBCH12 and at the end of winter. Therefore, no metabolites relevance assessment according to SANCO/221/2000 –rev.11 is not required.

The zRMS concludes that there is no unacceptable risk for leaching of the active substance

iodosulfuron-methyl-sodium and its metabolites to groundwater for the intended uses in spring.

**Mesosulfuron-methyl**

Evaluator agrees with modelling carried out by applicant for product PACYFIC. PECgw has been calculated according to the GAP using the models FOCUS PELMO 6.6.4., FOCUS PEARL 4.4.4 and using the input parameters established in the EU reviews: and mesosulfuron-methyl summarized in the EFSA conclusion (EFSA Journal 2016;14(10): 4584).

For the intended uses at the end of winter to spring in winter cereals at 15 g a.s./ha, and in spring cereals at 10 g a.s./ha, the parent active substance mesosulfuron-methyl does not reach or exceed the EU threshold value of 0.1 µg/L for any of the FOCUS groundwater scenarios.

For the intended use timing in autumn considering an application rate of 12 g a.s./ha, the threshold value is breached in 2/9 FOCUS groundwater scenarios: Hamburg and Okehampton.

In countries to which these particular scenarios are considered relevant, exposure mitigation via product label restriction for use only every second year is proposed to resolve the groundwater exposure assessment

Generally, the active substances iodosulfuron-methyl-sodium and mesosulfuron-methyl and their metabolites do not breach the EU threshold value of 0.1 µg/L for the intended uses of the present formulation.

The risk for groundwater is acceptable and no relevance assessment in Part B.10 for any of the assessed metabolites was required.

The risk to groundwater with regard to mefenpyr-diethyl and its metabolites is acceptable for the intended uses of the present formulation.

## Predicted Environmental Concentrations in surface water (PECsw) (KCP 9.2.5)

The registration report for Atlantis 12 OD did not include modelling for the safener mefenpyr-diethyl. As such, surface water modelling for mefenpyr-diethyl is provided by the applicant below.

### Justification for new endpoints

No new endpoints were used.

### Active substance(s), relevant metabolite(s) and the formulation (KCP 9.2.5)

**Structure of PECsw presentation**

To enable a stepwise ecotoxicological risk assessment according the tiered approaches of the EFSA Aquatic Guidance Document (AGD)[[4]](#footnote-4), a comprehensive set of exposure calculations and supportive information for exposure description is presented here in dRR Part B.8, in an order consistent with the later data use for risk assessment in dRR Part B Section 9:

As a first step, a **spray-drift exposure calculation for the formulated product** is made, based on Ganzelmeier tabulated standard drift values.

Thereafter, **exposure calculations for the individual components (active substances and metabolites) via the FOCUSsw approach** are made, in a structure as follows:

1. **FOCUS Steps 1-2 - PECsw/sed for a generic risk envelope use pattern covering all uses** to enable a simplified screening level assessment for components and organisms characterised by a wide margin of safety even when based on highly conservative exposure assumptions.

1. **FOCUS Step 3 – PECsw/sed (maximum and TWA) for the critical GAPs** to enable Tier 1 risk assessment based on the accurate GAP and standard FOCUS Step 3 exposure description, where assessment was not resolved at the before screening level. For the present product and uses, this applies only for the herbicidally active components iodosulfuron-methyl-sodium, metabolite AE F075736, and mesosulfuron-methyl on which all further risk assessments will concentrate.

FOCUS Step 3 PECsw/sed calculations for iodosulfuron-methyl-sodium and metabolite AE F075736 are normally prepared using laboratory data to describe the degradation kinetics in soil. Where helpful to pass the ecological risk assessment, additional calculations are provided using EU agreed soil degradation kinetics (DT50 and formation fraction) based on geomean of field soil dissipation study data for parent a.s. and metabolite AE F075736, as well as the EU-agreed plant uptake factor for metabolite AE F075736.

1. **FOCUS Step 4 – PECsw/sed (maximum and TWA) for the critical GAPs** to enable consideration of exposure mitigating measures, where required.

**Methodology information**

**(a) FOCUS Step 1-2 – Risk envelope PECsw/sed [for screening level assessment]**

**Risk envelope approach for Iodosulfuron-methyl-sodium:** For iodosulfuron-methyl-sodium and its metabolites, risk assessment for most aquatic organisms is resolved with a wide margin of safety even when based on highly conservative exposure assumptions. For dossier simplicity, a screening level assessment will therefore be presented first as a “risk envelope" approach, based on a generic FOCUS Step 1-2 exposure simulation for the maximum registered application rate and overall worst case exposure situation across all iodosulfuron-methyl-sodium containing products supported by Bayer AG in Europe.

FOCUS Step 3-4 calculations are performed for the critical product GAP(s). These calculations are only provided for those components which are failing the risk assessment at screening level, i.e. for the parent active substance and its relevant metabolite AE F075736.

**Table 8.9‑1: Risk envelope assessment (FOCUS Step 1,2): Input parameters related to application for PECSW/SED calculations - iodosulfuron-methyl-sodium**

|  |  |
| --- | --- |
| Plant protection product | risk envelope for active substance iodosulfuron-methyl-sodium and its metabolites |
| Use No. | covers all uses |
| Crop | arable crops, no interception |
| Application rate (kg as/ha) | 10 g a.s./ha |
| Number of applications/interval (d) | 1 / - |
| Application window | year-round:  October – February, March – May, June – September (Step 2) |
| Application method | Spray application |
| CAM (Chemical application method) | not relevant for FOCUS Steps 1, 2 |
| Soil depth (cm) | not relevant for FOCUS Steps 1, 2 |
| Models used for calculation | FOCUS STEPS 1-2 v3.2 |

**Risk envelope approach Mesosulfuron-methyl:** For mesosulfuron-methyl and its metabolites, risk assessment for most aquatic organisms is resolved with a wide margin of safety even when based on highly conservative exposure assumptions. For dossier simplicity, a screening level assessment will therefore be presented first as a “risk envelope" approach, based on a generic FOCUS Step 1-2 exposure simulation for the maximum registered application rate and overall worst case exposure situation across all mesosulfuron-methyl containing products supported by Bayer AG in Europe.

FOCUS Step 3-4 calculations are performed for the critical product GAP(s). These calculations are only provided for those components which are failing the risk assessment at screening level, i.e. for the parent active substance.

**Table 8.9‑2: Risk envelope assessment (FOCUS Step 1,2): Input parameters related to application for PECSW/SED calculations - mesosulfuron-methyl**

|  |  |
| --- | --- |
| Plant protection product | risk envelope for active substance mesosulfuron-methyl and its metabolites |
| Use No. | covers all uses |
| Crop | arable crops, no interception |
| Application rate (kg as/ha) | 15 g a.s./ha |
| Number of applications/interval (d) | 1 / - |
| Application window | year-round:  October – February, March – May, June – September (Step 2) |
| Application method | Spray application |
| CAM (Chemical application method) | not relevant for FOCUS Steps 1, 2 |
| Soil depth (cm) | not relevant for FOCUS Steps 1, 2 |
| Models used for calculation | FOCUS STEPS 1-2 v3.2 |

**(b) FOCUS Step 3 – PECsw/sed (maximum and TWA) [for Tier 1 assessment]**

**Table 8.9‑3: Input parameters related to application for PECSW/SED calculations – iodosulfuron-methyl-sodium, mesosulfuron-methyl**

|  |  |  |  |
| --- | --- | --- | --- |
| Plant protection product | IMS+MSM+MPR OD 42  (2+10+30) | IMS+MSM+MPR OD 42  (2+10+30) | IMS+MSM+MPR OD 42  (2+10+30) |
| Use No. | 5 | 4 | 2 |
| Crop | Winter cereals (arable crops) | Winter cereals (arable crops) | Spring cereals (arable crops) |
| Application rate (kg as/ha) | Iodosulfuron-methyl-sodium:  3 g a.s./ha    Mesosulfuron-methyl: 15 g a.s./ha | Iodosulfuron-methyl-sodium:  2 g a.s./ha    Mesosulfuron-methyl: 10 g a.s./ha | Iodosulfuron-methyl-sodium:  2 g a.s./ha    Mesosulfuron-methyl: 10 g a.s./ha |
| Number of  applications/interval (d) | 1 / - | 1 / - | 1 / - |
| Application window | End of winter to spring (start of vegetation period): see specific information provided  below    Application window used for modelling: see Table 8.9-4 | Autumn:  see specific information provided below      Application window used for modelling: see Table 8.9-5 | Spring use on spring cereals: absolute: based on AppDate  tool dates for BBCH 11-13      Application window used for modelling: see Table 8.9-6 |
| Application method | Spray application | Spray application | Spray application |
| CAM (Chemical application method) | 2 (application foliar linear) | 2 (application foliar linear) | 2 (application foliar linear) |
| Soil depth (cm) | 4 (default) | 4 (default) | 4 (default) |
| Models used for calculation | FOCUS SWASH v5.3  (FOCUS PRZM v4.3.1,  FOCUS MACRO v5.5.4,  FOCUS TOXWA v4.4.3) | FOCUS SWASH v5.3  (FOCUS PRZM v4.3.1,  FOCUS MACRO v5.5.4,  FOCUS TOXWA v4.4.3) | FOCUS SWASH v5.3  (FOCUS PRZM v4.3.1,  FOCUS MACRO v5.5.4,  FOCUS TOXWA v4.4.3) |

**Explanatory note on definition of application dates:**

* **end-of-winter to spring use in winter cereals**

The application in winter cereals according to GAP is intended at the onset of the spring vegetation period, i.e. when climate conditions allow for resumption of crop and weed growth after winter dormancy, and soil moisture level allows again for field trafficability by the farmer's equipment. Treatment is made to well-established crop at the growth stage reached at that time, within the BBCH boundaries specified in the GAP. At FOCUS Step 3, actual application dates are generally determined by the PAT (pesticide application timer) included within SWASH, which within a defined time window selects an appropriate actual application date to ensure at least 10 mm of rainfall in the first 10 days after application, and at the same time less than 2 mm of rain per day in a five day period around the date of application.

No pre-defined event dates are however implemented in the FOCUS model that would directly translate the above cropping situation into discrete PAT windows for each surface water scenario setting. To generate an adequate scenario-adapted representation with relative date setting, the following approach was therefore used: the simulated treatment was referenced relative to the tabulated crop emergence date of the earliest emerging spring crop (i.e. not necessarily cereals) that was defined by FOCUS for the respective scenario. Start of the PAT window was then set to 14 days before that date, as an adequate representation of the start of the vegetation period in the respective scenario environment.

An overview of the date selection per scenario is presented in the table below; for technical reason, such application dates must be entered to the simulation model formally as ‘absolute’ dates, even though referencing was in fact of relative type.

The approach and resulting model application date settings were discussed and agreed suitable during the EU review of active substance mesosulfuron-methyl (cf. DAR Vol. 3 – B.8(PPP) – Atlantis OD).

**Table 8.9‑4: Application date definition used for surface water exposure assessment – End-of-winter use in winter cereals**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Scenario** | **Location** | **Crop** | **Emergence date** | **Start of application**  **window**  **Julian date** |
| D1  D2  D3  D4  D5  D6  R1  R2  R3  R4 | Lanna  Brimstone  Vredepeel  Skousbo  La Jailliere  Thiva  Weiherbach  Porto  Bologna  Roujan | spring cereals  spring cereals a)  spring cereals field beans  spring cereals  root vegetables field beans  bulb vegetables root vegetables root vegetables | 05-May  15-Mara)  01-Apr  15-Apr  15-Mar  25-Feb  10-Apr  28-Feb  26-Feb  26-Feb | 21-Apr  01-Mara)  18-Mar  01-Apr  01-Mar  11-Feb  27-Mar  14-Feb  12-Feb  12-Feb |

a) no crop with emergence in spring defined; D5 data used instead

* **autumn use in winter cereals:**

Model application timing for the autumn use GAP on winter cereals was defined relative to the tabulated crop emergence date per FOCUS scenario. A start of the PAT window 14 days after crop emergence date was considered to represent a typical use timing for the present product, which translates in a model date selection as follows:

**Table 8.9‑5: FOCUS Step 3 Scenario related input parameters for PECsw/sed calculations for the application of IMS+MSM+MPR OD 42 (2+10+30)**

|  |  |  |
| --- | --- | --- |
| **Crop** | **Scenario** | **Application window used in modelling** |
| Winter cereals,  Autumn use | D1 Ditch/Stream  D2 Ditch/Stream D3 Ditch  D4 Pond/Stream  D5 Pond/Stream D6 Ditch  R1 Pond/Stream R3 Stream  R4 Stream | 09-Oct - 08-Nov  08-Nov - 08-Dec  05-Dec - 04-Jan  06-Oct - 05-Nov  24-Nov - 24-Dec 14-Dec - 13-Jan  26-Nov - 26-Dec 15-Dec - 14-Jan  24-Nov - 24-Dec |

* **spring use in spring cereals**

Model application timing for the spring use GAP on spring cereals was defined via absolute date setting based on the AppDate tool, to represent a treatment at earliest intended growth stage according GAP (BBCH 13) as a worst case. This procedure translates into a model application date selection as follows:

**Table 8.9‑6: FOCUS Step 3 Scenario related input parameters for PECsw/sed calculations for the application of IMS+MSM+MPR OD 42 (2+10+30)**

|  |  |  |
| --- | --- | --- |
| **Crop** | **Scenario** | **Application window used in modelling** |
| Spring cereals, Spring use | D1 Ditch/Stream D3 Ditch  D4 Pond/Stream  D5 Pond/Stream R4 Stream | 09-May - 08-Jun  06-Apr - 06-May  30-Apr - 30-May  20-Mar - 19-Apr  20-Mar - 19-Apr |

**(c) FOCUS Step 4 – PECsw/sed (maximum and TWA) [for Tier 1 assessment considering mitigation options]**

Exposure simulations considering options for exposure mitigation according FOCUS Step 4 methodology[[5]](#footnote-5) were conducted for all components of biological relevance, based on the same substance and timing parameters previously used at Step 3. Where this information is not necessary to complete the aquatic risk assessment, Step 4 results are located in the Appendix section, for formal dossier completeness only.

\*\*\*\*\*

#### Spray drift exposure calculation for the formulated product

The PECsw of the formulation was calculated according to the following formula:

% drift (90th percentile) × application rate [g/ha]

PECsw [µg/L] = water depth (30 cm) × 10

|  |  |
| --- | --- |
| Application rate & frequency / Crop | 1 × 1.5 L/ha, cereals |
| Scenario / Drift percentile | Arable crops / 90th percentile (for 1 x application) |
| Entry pathways considered | Drift: yes  Volatilisation: no |

PECsw for formulations are based on Ganzelmeier data covering the respective crop (arable crops) and the number of applications. All loadings are considered to occur in a single pseudo-application reaching the standard static ditch (width 1 m, depth 30 cm, sediment depth 5 cm, and sediment density 0.8 kg/L). Since no degradation data is available for the product, no TWA concentrations can be calculated.

**Table 8.9‑7: PECsw via spray drift for 054-01-05 following applications to cereals, 1 × 1.5 L/ha**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PECsw (μg/L)** |  | **distance (m) / drift (%)** | | |  |
| **1m / 2.77%** | **5m / 0.57%** | **10m / 0.29%** | **15m / 0.20%** | **20 m / 0.15%** |
| 0 % drift reduction | 13.85 | 2.85 | 1.45 | 1.00 | 0.75 |
| 50% drift reduction | 6.93 | 1.43 | 0.73 | 0.50 | 0.38 |
| 75% drift reduction | 3.46 | 0.71 | 0.36 | 0.25 | 0.19 |
| 90% drift reduction | 1.39 | 0.29 | 0.15 | 0.10 | 0.08 |

\*considered density of 1 g/mL

#### Iodosulfuron-methyl-sodium and its metabolites

For iodosulfuron-methyl-sodium, the exposure assessment may follow a tiered approach as described below, for which dedicated modelling endpoints were agreed in the EU review.

1. **Standard calculation[[6]](#footnote-6):** soil kinetics (DT50 and formation fractions) for all components based on geomean of standard laboratory study data.

1. **Refined calculation[[7]](#footnote-7):** soil degradation kinetics for parent a.s. and metabolite AE F075736 (DT50 and formation fraction) based on geomean of field soil dissipation study data; consideration of EU agreed plant uptake factor for metabolite AE F075736; kinetic parameters for other metabolites – where considered in this step - are based on laboratory studies.

For iodosulfuron-methyl-sodium, agreed endpoints were used as input to exposure modelling as follows:

**Table 8.9‑8: Input parameters related to active substance iodosulfuron-methyl-sodium and metabolites for PECsw/sed calculations STEP 1/2 and 3/4**

| **Compound** | **Iodosulfuron-methyl-sodium** | **AE F075736** | **AE F145741** | **AE F145740** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| --- | --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 529.3 | 381.4 | 493.2 | 493.2 | Y / EFSA 2016;14(4) |
| Saturated vapour pressure (Pa) | 2.6x10-9  #  (20°C) | 1x10-10 b | 1x10-10 Pa b | 1x10-10 Pa b | # Y / EFSA  2016;14(4) |
| Water solubility (mg/L) | 25000  (20°C) | 2790  (20°C) | 1000 mg/L b | 1000 mg/L b | Y / EFSA 2016;14(4) |
| Diffusion coefficient in water (m²/d) | 4.3 x 10-5 | 4.3 x 10-5 | -a | -a | default |
| Diffusion coefficient in air (m²/d) | 0.43 | 0.43 | -a | -a | default |
| Kfoc (mL/g) | 33.45  (geomean, n = 9) | 14.0  (geomean, n =  22) | 0 | 17.9 (geometric man, n = 4) | Y / EFSA 2016;14(4) |
| Freundlich Exponent 1/n | 0.87  (arithmetic mean,  n = 9) | 1.0  (arithmetic mean, n = 22) | 1.0 | 0.92 (arithmetic mean, n = 4) | Y / EFSA 2016;14(4) |
| Plant Uptake | 0 | 0 | -a | -a | N /  Worst case assumption |
| Wash-Off factor from Crop (1/mm) | 0.05 (MACRO)  0.50 (PRZM) | 0.05 (MACRO)  0.50 (PRZM) | -a | -a | Default |
| DT50,soil (d) | 2.7 (geomean, normalisation to pF2, 20 °C with  Q10 of 2.58, n  =11) | 24.9 (geomean, normalisation to pF2, 20 °C with  Q10 of 2.58, n  =19) | 8.7 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =5) | 46.0 (geomean, normalisation to pF2, 20 °C with  Q10 of 2.58, n  =4) | Y / EFSA 2016;14(4) |
| DT50,water (d) | 19.8  (Step 2+3) | 131  (Step 2+3) | 73.4 | 45.4 | Y / EFSA 2016;14(4) |
| DT50,sed (d) | 19.8 (Step 2) / 1000 (Step 3) | 131 (Step 2) / 1000 (Step 3) | 73.4 | 45.4 | Y / EFSA 2016;14(4) |
| DT50,whole system (d) | 19.8  (geomean, n = 3) | 131  (geomean, n = 3) | 73.4  (geomean, n = 2) | 45.4  (geomean, n =  2) | Y / EFSA 2016;14(4) |
| Maximum occurrence observed (% molar basis with respect to the parent) | - | Soil: 88.5  Water/sediment::  67.8 | Soil: 6.9  Water/sediment:  8.7 | Soil: 8.7  Water/sediment:  12.6 | Y / EFSA 2016;14(4) |
| Formation fraction in soil: | - | 0.86 (from IMS) | 0.05 (from IMS) | 0.04 (from IMS) | Y / EFSA 2016;14(4) |

a not required for Steps 1-2 simulations b Not measured. Default value used

**Table 8.9‑9: Input parameters related to iodosulfuron-methyl-sodium metabolites for**

**PECsw/sed calculations STEP 1/2 (continued)**

| **Compound** | **AE 0002166** | **AE F161778** | **BCS-CW81253** | **AE 0000119** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| --- | --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 397.4 | 367.3 | 343.3 | 183.2 | Y / EFSA 2016;14(4) |
| Saturated vapour pressure (Pa) | 1x10-10 Pa b | 1x10-10 b | 1x10-10 Pa b | 1x10-10 Pa b | N / Worst case assumption |
| Water solubility (mg/L) | 1000 mg/L b | 1000 mg/L b | 1000 mg/L b | 200  (20°C) | Y / EFSA 2016;14(4) |
| Diffusion coefficient in water (m²/d) | -a | -a | -a | -a | default |
| Diffusion coefficient in air (m²/d) | -a | -a | -a | -a | default |
| Kfoc (mL/g) | 0 | 29.7  (geomean, n = 6) | 41.8 (geometric man, n = 7) | 117.2  (geometric man, n = 9) | Y / EFSA 2016;14(4) |
| Freundlich Exponent 1/n | 1.0 | 1.0  (arithmetic mean, n = 6) | 0.91 (arithmetic mean, n = 7) | 0.91 (arithmetic mean, n = 9) | Y / EFSA 2016;14(4) |
| Plant Uptake | -a | -a | -a | -a | - |
| Wash-Off factor from Crop (1/mm) | -a | -a | -a | -a | - |
| DT50,soil (d) | 7.5  (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =4) | 11.4 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n=14) | 26.7 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n=10) | 15.0 (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n=9) | Y / EFSA 2016;14(4) |
| DT50,water (d) | 1000 | 1000 | 1000 | 28.4 | Y / EFSA 2016;14(4) |
| DT50,sed (d) | 1000 | 1000 | 1000 | 28.4 | Y / EFSA 2016;14(4) |
| DT50,whole system (d) | 1000 (default) | 1000 (default) | 1000 (default) | 28.4  (geomean, n =  2) | Y / EFSA 2016;14(4) |
| Maximum occurrence observed (% molar basis with respect to the parent) | Soil: 20  Water/sediment:  25.1 | Soil: 14.5  Water/sediment:  2.6% | Soil: 35.1  Water/sediment:  0.0001% | Soil: 19.99  Water/sediment:  24.9 | Y / EFSA 2016;14(4) |
| Formation fraction in soil: | - | 0.55 (from AE  F075736) | 0.72 (from AE  F161778) | 0.33 (from AE  F075736) | Y / EFSA 2016;14(4) |

a not required for Steps 1-2 simulations b Not measured. Default value used

**Table 8.9‑10: Input parameters related to iodosulfuron-methyl-sodium metabolites for**

**PECsw/sed calculations STEP 1/2 (continued)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Compound** | **AE F059411** | **AE 0014966** | **AE 0034855** | **AE 1234964** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| Molecular weight (g/mol) | 140.1 | 367.3 | 169.1 | 201.2 | Y / EFSA 2016;14(4) |
| Saturated vapour pressure (Pa) | 1x10-10 b | 1x10-10 Pa b | 1x10-10 Pa b | 1x10-10 Pa b | N / Worst case assumption |
| Water solubility (mg/L) | 1000 mg/L b | 1000 mg/L b | 1000 mg/L b | 1000 mg/L b | Y / EFSA 2016;14(4) |
| Diffusion coefficient in water (m²/d) | -a | -a | -a | -a | - |
| Diffusion coefficient in air (m²/d) | -a | -a | -a | -a | - |
| Kfoc (mL/g) | 45.6  (geomean, n = 27) | 0 | 0 | 0.0001 | Y / EFSA 2016;14(4) |
| Freundlich Exponent 1/n | 0.9  (arithmetic mean, n = 27) | 1.0 | 1.0 | 1.0 | Y / EFSA 2016;14(4) |
| Plant Uptake | -a | -a | -a | -a | - |
| Wash-Off factor from Crop (1/mm) | -a | -a | -a | -a | - |
| DT50,soil (d) | 144 (geomean, normalisation to pF2, 20 °C with  Q10 of 2.58, n  =16) | 0.0001 | 0.0001 | 0.0001 | Y / EFSA 2016;14(4) |
| DT50,water (d) | 9.9 | 43.8 | 1000 | 1000 | Y / EFSA 2016;14(4) |
| DT50,sed (d) | 9.9 | 43.8 | 1000 | 1000 | Y / EFSA 2016;14(4) |
| DT50,whole system (d) | 9.9  (geomean, n = 2) | 43.8  (geomean, n = 2) | 1000 (default) | 1000 (default) | Y / EFSA 2016;14(4) |
| Maximum occurrence observed (% molar basis with respect to the parent) | Soil: 64.5  Water/sediment:  27.5 | Soil: 0.0001 Water/sediment:  15.5 | Soil: 0.0001 Water/sediment:  24.2 | Soil: 0.0001 Water/sediment:  7.4 | Y / EFSA 2016;14(4) |
| Formation fraction in soil: | 0.42 (from AE  F075736) | - | - | - | - |

a not required for Steps 1-2 simulations b Not measured. Default value used

**Table 8.9‑11: Input parameters related to iodosulfuron-methyl-sodium metabolites for**

**PECsw/sed calculations STEP 1/2 (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Compound** | **AE F159737** | **AE F154781** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| Molecular weight (g/mol) | 183.2 | 126.1 | Y /  EFSA 2016;14(4) |
| Saturated vapour pressure (Pa) | 1x10-10 Pa b | 1x10-10 Pa b | N /  Worst case assumption |
| Water solubility (mg/L) | 1000 mg/L b | 1000 mg/L b | Y /  EFSA 2016;14(4) |
| Diffusion coefficient in water  (m²/d) | -a | -a | default |
| Diffusion coefficient in air (m²/d) | -a | -a | default |
| Kfoc (mL/g) | 0 | 0.0001 | Y /  EFSA 2016;14(4) |
| Freundlich Exponent 1/n | 1.0 | 1.0 | Y /  EFSA 2016;14(4) |
| Plant Uptake | -a | -a | - |
| Wash-Off factor from Crop (1/mm) | -a | -a | - |
| DT50,soil (d) | 0.0001 | 0.0001 | Y /  EFSA 2016;14(4) |
| DT50,water (d) | 1000 | 1000 | Y /  EFSA 2016;14(4) |
| DT50,sed (d) | 1000 | 1000 | Y /  EFSA 2016;14(4) |
| DT50,whole system (d) | 1000 (default) | 1000 (default) | Y /  EFSA 2016;14(4) |
| Maximum occurrence observed (% molar basis with respect to the parent) | Soil: 0.0001  Water/sediment: 7.8 | Soil: 0.0001  Water/sediment: 8.7 | Y /  EFSA 2016;14(4) |
| Formation fraction in soil: | - | - | - |

1. not required for Steps 1-2 simulations
2. Not measured. Default value used

For the presentation of a refined ecotoxicological assessment for iodosulfuron-methyl-sodium and its metabolite AE F075736, for selected uses additional calculations are provided using EU agreed soil degradation kinetics (DT50 and formation fraction) based on geomean of field soil dissipation study data for parent a.s. and metabolite AE F075736, as well as the EU-agreed plant uptake factor for metabolite AE F075736:

**Table 8.9‑12: Refined input parameters related to active substance iodosulfuron-methyl-sodium and metabolite AE F075736 for PECsw/sed calculation STEP 3/4,**

**- for calculations using soil kinetics from field dissipation studies**

|  |  |  |  |
| --- | --- | --- | --- |
| **Compound** | **Iodosulfuron-methyl-sodium** | **AE F075736** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| Molecular weight (g/mol) | 529.3 | 381.4 | Y / EFSA 2016;14(4) |
| Saturated vapour pressure (Pa) | 2.6x10-9  #  (20°C) | 1x10-10 b | #) Y / EFSA 2016;14(4) b) default value |
| Water solubility (mg/L) | 25000  (20°C) | 2790  (20°C) | Y / EFSA 2016;14(4) |
| Diffusion coefficient in water (m²/d) | 4.3 x 10-5 | 4.3 x 10-5 | default |
| Diffusion coefficient in air (m²/d) | 0.43 | 0.43 | default |
| Kfoc (mL/g) | 33.45  (geomean, n = 9) | 14.0  (geomean, n = 22) | Y / EFSA 2016;14(4) |
| Freundlich Exponent 1/n | 0.87  (arithmetic mean, n = 9) | 1.0  (arithmetic mean, n = 22) | Y / EFSA 2016;14(4) |
| Plant Uptake | 0 | 0.5 | Y / EFSA 2016;14(4) |
| Wash-Off factor from Crop (1/mm) | 0.05 (MACRO)  0.50 (PRZM) | 0.05 (MACRO)  0.50 (PRZM) | default |
| DT50,soil (d) | 3.2  (geomean, normalisation to pF2, 20 °C with Q10 of 2.58, n =5) | 13.2  (geomean, normalisation to pF2, 20 °C with Q10 of  2.58, n =16) | Y / EFSA 2016;14(4) |
| DT50,water (d) | 19.8 | 131 | Y / EFSA 2016;14(4) |
| DT50,sed (d) | 1000 | 1000 | Y / EFSA 2016;14(4) |
| DT50,whole system (d) | 19.8  (geomean, n = 3) | 131  (geomean, n = 3) | Y / EFSA 2016;14(4) |
| Formation fraction in soil: | - | 0.55 (from IMS)  (arithmetic mean, n=10) | Y / EFSA 2016;14(4) |

**(a) FOCUS Steps 1-2 – Risk envelope PECsw/sed of iodosulfuron-methyl-sodium and all metabolites [for screening level assessment]**

**Table 8.9‑13: FOCUS Step 1,2 PECsw and PECsed for iodosulfuron-methyl-sodium following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 3.2832 | Run-off/Drain | 2.9087 | 2.3222 | 1.0659 |
| Step 2 |  | |  |  |  |  |
| Spring | N-Europe | 0.3062\* | Run-off/Drain | 0.2707\*\* | 0.2161\*\* | 0.0984\* |
| S-Europe | 0.5348\* | Run-off/Drain | 0.4734\*\* | 0.3780\*\* | 0.1721\* |
| Summer | N-Europe | 0.3062\* | Run-off/Drain | 0.2707\*\* | 0.2161\*\* | 0.0984\* |
| S-Europe | 0.4205\* | Run-off/Drain | 0.3721\*\* | 0.2970\*\* | 0.1353\* |
| Autumn | N-Europe | 0.6491\* | Run-off/Drain | 0.5748\*\* | 0.4589\*\* | 0.2090 |
| S-Europe | 0.3062\* | Run-off/Drain | 0.2707\*\* | 0.2161\*\* | 0.0984\* |

\* single applications should be marked. \*\* twa-time as required by ecotox

**Table 8.9‑14**: **FOCUS Step 1, 2 PECsw and PECsed for AE F075736 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 3.7303 | Run-off/Drain | 3.6613 | 3.5298 | 0.5194 |
| Step 2 |  | |  |  |  |  |
| Spring | N-Europe | 0.5313\* | Run-off/Drain | 0.5214\*\* | 0.5026\*\* | 0.0740\* |
| S-Europe | 1.0192\* | Run-off/Drain | 1.0003\*\* | 0.9644\*\* | 0.1419\* |
| Summer | N-Europe | 0.5313\* | Run-off/Drain | 0.5214\*\* | 0.5026\*\* | 0.0740\* |
| S-Europe | 0.7753\* | Run-off/Drain | 0.7608\*\* | 0.7335\*\* | 0.1079\* |
| Autumn | N-Europe | 1.2631\* | Run-off/Drain | 1.2398\*\* | 1.1952\*\* | 0.1759\* |
| S-Europe | 1.0192\* | Run-off/Drain | 1.0003\*\* | 0.9644\*\* | 0.1419\* |

* single applications should be marked. \*\* twa-time as required by ecotox

**Table 8.9‑15: FOCUS Step 1, 2 PECsw and PECsed for AE F145741 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.4920 | Run-off/Drain | 0.4761 | 0.4463 | <0.001 |
| Step 2 | | |  |  | |  |
| Spring | N-Europe | 0.0577\* | Run-off/Drain | 0.0558 \*\* | 0.0523\*\* | <0.0001\* |
| S-Europe | 0.1082\* | Run-off/Drain | 0.1047\*\* | 0.0982\*\* | <0.0001\* |
| Summer | N-Europe | 0.0577\* | Run-off/Drain | 0.0558 \*\* | 0.0523\*\* | <0.0001\* |
| S-Europe | 0.0830\* | Run-off/Drain | 0.0803\*\* | 0.0753\*\* | <0.0001\* |
| Autumn | N-Europe | 0.1335\* | Run-off/Drain | 0.1292\*\* | 0.1211\*\* | <0.0001\* |
| S-Europe | 0.1082\* | Run-off/Drain | 0.1047\*\* | 0.0982\*\* | <0.0001\* |

* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑16: FOCUS Step 1, 2 PECsw and PECsed for AE F145740 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.6570 | Run-off/Drain | 0.6228 | 0.5618 | 0.1158 |
| Step 2 | | |  |  | |  |
| Spring | N-Europe | 0.0871\* | Run-off/Drain | 0.0825\*\* | 0.0744\*\* | 0.0153\* |
| S-Europe | 0.1642\* | Run-off/Drain | 0.1556\*\* | 0.1404\*\* | 0.0289\* |
| Summer | N-Europe | 0.0871\* | Run-off/Drain | 0.0825\*\* | 0.0744\*\* | 0.0153\* |
| S-Europe | 0.1256\* | Run-off/Drain | 0.1191\*\* | 0.1074\*\* | 0.0221\* |
| Autumn | N-Europe | 0.2027\* | Run-off/Drain | 0.1922\*\* | 0.1733\*\* | 0.0357\* |
| S-Europe | 0.1642\* | Run-off/Drain | 0.1556\*\* | 0.1404\*\* | 0.0289\* |

* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑17: FOCUS Step 1, 2 PECsw and PECsed for AE 0002166 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 1.1460 | Run-off/Drain | 1.1433 | 1.1377 | <0.001 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.1315\* | Run-off/Drain | 0.1311\*\* | 0.1305\*\* | <0.0001\* |
| S-Europe | 0.2456\* | Run-off/Drain | 0.2450\*\* | 0.2438\*\* | <0.0001\* |
| Summer | N-Europe | 0.1315\* | Run-off/Drain | 0.1311\*\* | 0.1305\*\* | <0.0001\* |
| S-Europe | 0.1885\* | Run-off/Drain | 0.1881\*\* | 0.1872\*\* | <0.0001\* |
| Autumn | N-Europe | 0.3027\* | Run-off/Drain | 0.3020\*\* | 0.3005\*\* | <0.0001\* |
| S-Europe | 0.2456\* | Run-off/Drain | 0.2450\*\* | 0.2438\*\* | <0.0001\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑18: FOCUS Step 1, 2 PECsw and PECsed for AE F161778 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.3821 | Run-off/Drain | 0.3812 | 0.3793 | 0.1134 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.0564\* | Run-off/Drain | 0.0562\*\* | 0.0559\*\* | 0.0167\* |
| S-Europe | 0.1111\* | Run-off/Drain | 0.1108\*\* | 0.1103\*\* | 0.0330\* |
| Summer | N-Europe | 0.0564\* | Run-off/Drain | 0.0562\*\* | 0.0559\*\* | 0.0167\* |
| S-Europe | 0.0837\* | Run-off/Drain | 0.0835\*\* | 0.0831\*\* | 0.0248\* |
| Autumn | N-Europe | 0.1385\* | Run-off/Drain | 0.1381\*\* | 0.1374\*\* | 0.0411\* |
| S-Europe | 0.1111\* | Run-off/Drain | 0.1108\*\* | 0.1103\*\* | 0.0330\* |

* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑19: FOCUS Step 1, 2 PECsw and PECsed for BCS-CW81253 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.7188 | Run-off/Drain | 0.7171 | 0.7136 | 0.3005 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.1296\* | Run-off/Drain | 0.1293\*\* | 0.1286\*\* | 0.0542\* |
| S-Europe | 0.2592\* | Run-off/Drain | 0.2585\*\* | 0.2573\*\* | 0.1083\* |
| Summer | N-Europe | 0.1296\* | Run-off/Drain | 0.1293\*\* | 0.1286\*\* | 0.0542\* |
| S-Europe | 0.1944\* | Run-off/Drain | 0.1939\*\* | 0.1930\*\* | 0.0813\* |
| Autumn | N-Europe | 0.3240\* | Run-off/Drain | 0.3232\*\* | 0.3216\*\* | 0.1354\* |
| S-Europe | 0.2592\* | Run-off/Drain | 0.2585\*\* | 0.2573\*\* | 0.1083\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑20: FOCUS Step 1, 2 PECsw and PECsed for AE 0000119 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.4549 | Run-off/Drain | 0.4173 | 0.3551 | 0.5239 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.0573\* | Run-off/Drain | 0.0524\*\* | 0.0446\*\* | 0.0652\* |
| S-Europe | 0.1081\* | Run-off/Drain | 0.0992\*\* | 0.0844\*\* | 0.1242\* |
| Summer | N-Europe | 0.0573\* | Run-off/Drain | 0.0524\*\* | 0.0446\*\* | 0.0652\* |
| S-Europe | 0.0827\* | Run-off/Drain | 0.0758\*\* | 0.0645\*\* | 0.0944\* |
| Autumn | N-Europe | 0.1335\* | Run-off/Drain | 0.1225\*\* | 0.1043\*\* | 0.1540\* |
| S-Europe | 0.1081\* | Run-off/Drain | 0.0992\*\* | 0.0844\*\* | 0.1242\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑21: FOCUS Step 1, 2 PECsw and PECsed for AE F059411 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.5756 | Run-off/Drain | 0.4548 | 0.3013 | 0.2594 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.0880\* | Run-off/Drain | 0.0695\*\* | 0.0461\*\* | 0.0394\* |
| S-Europe | 0.1711\* | Run-off/Drain | 0.1353\*\* | 0.0896\*\* | 0.0773\* |
| Summer | N-Europe | 0.0880\* | Run-off/Drain | 0.0695\*\* | 0.0461\*\* | 0.0394\* |
| S-Europe | 0.1295\* | Run-off/Drain | 0.1024\*\* | 0.0678\*\* | 0.0583\* |
| Autumn | N-Europe | 0.2127\* | Run-off/Drain | 0.1681\*\* | 0.1114\*\* | 0.0962\* |
| S-Europe | 0.1711\* | Run-off/Drain | 0.1353\*\* | 0.0896\*\* | 0.0773\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑22: FOCUS Step 1, 2 PECsw and PECsed for AE 0014966 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.3684 | Run-off/Drain | 0.3488 | 0.3135 | <0.001 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.0350\* | Run-off/Drain | 0.0331\*\* | 0.0298\*\* | <0.0001\* |
| S-Europe | 0.0606\* | Run-off/Drain | 0.0574\*\* | 0.0516\*\* | <0.0001\* |
| Summer | N-Europe | 0.0350\* | Run-off/Drain | 0.0331\*\* | 0.0298\*\* | <0.0001\* |
| S-Europe | 0.0478\* | Run-off/Drain | 0.0453\*\* | 0.0407\*\* | <0.0001\* |
| Autumn | N-Europe | 0.0735\* | Run-off/Drain | 0.0696\*\* | 0.0625\*\* | <0.0001\* |
| S-Europe | 0.0606\* | Run-off/Drain | 0.0574\*\* | 0.0516\*\* | <0.0001\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑23: FOCUS Step 1, 2 PECsw and PECsed for AE 0034855 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.2648 | Run-off/Drain | 0.2642 | 0.2629 | <0.001 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.0256\* | Run-off/Drain | 0.0255\*\* | 0.0254\*\* | <0.0001\* |
| S-Europe | 0.0440\* | Run-off/Drain | 0.0439\*\* | 0.0437\*\* | <0.0001\* |
| Summer | N-Europe | 0.0256\* | Run-off/Drain | 0.0255\*\* | 0.0254\*\* | <0.0001\* |
| S-Europe | 0.0348\* | Run-off/Drain | 0.0347\*\* | 0.0345\*\* | <0.0001\* |
| Autumn | N-Europe | 0.0532\* | Run-off/Drain | 0.0531\*\* | 0.0529\*\* | <0.0001\* |
| S-Europe | 0.0440\* | Run-off/Drain | 0.0439\*\* | 0.0437\*\* | <0.0001\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑24: FOCUS Step 1, 2 PECsw and PECsed for AE 1234964 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.0964 | Run-off/Drain | 0.0961 | 0.0957 | <0.001 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.0093\* | Run-off/Drain | 0.0093\*\* | 0.0092\*\* | <0.0001\* |
| S-Europe | 0.0160\* | Run-off/Drain | 0.0160\*\* | 0.0159\*\* | <0.0001\* |
| Summer | N-Europe | 0.0093\* | Run-off/Drain | 0.0093\*\* | 0.0092\*\* | <0.0001\* |
| S-Europe | 0.0127\* | Run-off/Drain | 0.0126\*\* | 0.0126\*\* | <0.0001\* |
| Autumn | N-Europe | 0.0194\* | Run-off/Drain | 0.0193\*\* | 0.0192\*\* | <0.0001\* |
| S-Europe | 0.0160\* | Run-off/Drain | 0.0160\*\* | 0.0159\*\* | <0.0001\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑25: FOCUS Step 1, 2 PECsw and PECsed for AE F159737 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.0925\* | Run-off/Drain | 0.0923 | 0.0918 | <0.001 |
| Step 2 |  |  |  |  | |  |
| Spring | N-Europe | 0.0089\* | Run-off/Drain | 0.0089\*\* | 0.0089\*\* | <0.0001\* |
| S-Europe | 0.0154\* | Run-off/Drain | 0.0153\*\* | 0.0153\*\* | <0.0001\* |
| Summer | N-Europe | 0.0089\* | Run-off/Drain | 0.0089\*\* | 0.0076\*\* | <0.0001\* |
| S-Europe | 0.0121\* | Run-off/Drain | 0.0121\*\* | 0.0121\*\* | <0.0001\* |
| Autumn | N-Europe | 0.0186\* | Run-off/Drain | 0.0185\*\* | 0.0185\*\* | <0.0001\* |
| S-Europe | 0.0154\* | Run-off/Drain | 0.0153\*\* | 0.0153\*\* | <0.0001\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑26: FOCUS Step 1, 2 PECsw and PECsed for AE F154781 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7-d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 0.0710 | Run-off/Drain | 0.0708 | 0.0705 | <0.001 |
| Step 2 |  | |  |  | |  |
| Spring | N-Europe | 0.0069\* | Run-off/Drain | 0.0068\*\* | 0.0068\*\* | <0.0001\* |
| S-Europe | 0.0118\* | Run-off/Drain | 0.0118\*\* | 0.0117\*\* | <0.0001\* |
| Summer | N-Europe | 0.0069\* | Run-off/Drain | 0.0068\*\* | 0.0068\*\* | <0.0001\* |
| S-Europe | 0.0093\* | Run-off/Drain | 0.0093\* | 0.0093\*\* | <0.0001\* |
| Autumn | N-Europe | 0.0143\* | Run-off/Drain | 0.0142\*\* | 0.0142\*\* | <0.0001\* |
| S-Europe | 0.0118\* | Run-off/Drain | 0.0118\*\* | 0.0117\*\* | <0.0001\* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**(b) FOCUS Step 3 – PECsw/sed (maximum and TWA) of iodosulfuron-methyl-sodium and metabolite AE F075736 [for Tier 1 assessment]**

**Table 8.9‑27: FOCUS Step 3 PECsw and PECsed for iodosulfuron-methyl-sodium following application of IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end of winter to spring application**

| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| --- | --- | --- | --- | --- | --- | --- |
| **Step 3: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end of winter to spring application 1)** | | | | | | |
| ~~D1~~ | ~~ditch~~ | ~~0.0197 \*~~ | ~~Spray drift~~ | ~~0.0170~~ | ~~0.0093~~ | ~~0.0159 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.0165 \*~~ | ~~Spray drift~~ | ~~0.0009~~ | ~~0.0006~~ | ~~0.0029 \*~~ |
| ~~D2~~ | ~~ditch~~ | ~~0.1540 \*~~ | ~~Drainage~~ | ~~0.0639~~ | ~~0.0449~~ | ~~0.0515 \*~~ |
| ~~D2~~ | ~~stream~~ | ~~0.0962 \*~~ | ~~Drainage~~ | ~~0.0332~~ | ~~0.0234~~ | ~~0.0290 \*~~ |
| D3 | ditch | 0.0191 \* | Spray drift | 0.0025 | 0.0008 | 0.0036 \* |
| D4 | pond | 0.0007 \* | Spray drift | 0.0006 | 0.0006 | 0.0010 \* |
| D4 | stream | 0.0144 \* | Spray drift | < 0.0001 | < 0.0001 | 0.0004 \* |
| D5 | pond | 0.0007 \* | Spray drift | 0.0006 | 0.0006 | 0.001 \* |
| D5 | stream | 0.0149 \* | Spray drift | < 0.0001 | < 0.0001 | 0.0003 \* |
| ~~D6~~ | ~~ditch~~ | ~~0.019 \*~~ | ~~Spray drift~~ | ~~0.0013~~ | ~~0.0005~~ | ~~0.0027 \*~~ |
| R1 | pond | 0.0007 \* | Spray drift | 0.0006 | 0.0006 | 0.0012 \* |
| R1 | stream | 0.0139 \* | Runoff | 0.0008 | 0.0005 | 0.0023 \* |
| R3 | stream | 0.0428 \* | Runoff | 0.0030 | 0.0013 | 0.0068 \* |
| R4 | stream | 0.0292 \* | Runoff | 0.0035 | 0.0013 | 0.0063 \* |

* single applications should be marked. \*\* twa-time as required by ecotox data origin (modelling report & crop no.): 1) EnSa-17-0475, Winter cereals 1.

**Table 8.9‑28: Refined FOCUS Step 3 PECsw and PECsed for iodosulfuron-methyl-sodium following application of IMS+MSM+MPR OD 42 (2+10+30)**

* + **Use: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end of winter to spring application**

| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Step 3: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end of winter to spring application - refined simulation based on field soil kinetics data 2)** | | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~0.0198 \*~~ | ~~Spray drift~~ | ~~0.0171~~ | ~~0.0093~~ | ~~0.0161~~ | ~~\*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.0165 \*~~ | ~~Spray drift~~ | ~~0.0009~~ | ~~0.0006~~ | ~~0.0030~~ | ~~\*~~ |
| ~~D2~~ | ~~ditch~~ | ~~0.1788 \*~~ | ~~Drainage~~ | ~~0.0760~~ | ~~0.0548~~ | ~~0.0625~~ | ~~\*~~ |
| ~~D2~~ | ~~stream~~ | ~~0.1119 \*~~ | ~~Drainage~~ | ~~0.0398~~ | ~~0.0288~~ | ~~0.0354~~ | ~~\*~~ |
| D3 | ditch | 0.0191 \* | Spray drift | 0.0025 | 0.0008 | 0.0036 | \* |
| D4 | pond | 0.0007 \* | Spray drift | 0.0006 | 0.0006 | 0.0010 | \* |
| D4 | stream | 0.0144 \* | Spray drift | <0.001 | <0.001 | 0.0004 | \* |
| D5 | pond | 0.0007 \* | Spray drift | 0.0006 | 0.0006 | 0.0010 | \* |
| D5 | stream | 0.0149 \* | Spray drift | <0.001 | <0.001 | 0.0003 | \* |
| ~~D6~~ | ~~ditch~~ | ~~0.0190 \*~~ | ~~Spray drift~~ | ~~0.0013~~ | ~~0.0005~~ | ~~0.0027~~ | ~~\*~~ |
| R1 | pond | 0.0007 \* | Runoff | 0.0006 | 0.0006 | 0.0012 | \* |
| R1 | stream | 0.0149 \* | Runoff | 0.0009 | 0.0006 | 0.0025 | \* |
| R3 | stream | 0.0453 \* | Runoff | 0.0032 | 0.0014 | 0.0072 | \* |
| R4 | stream | 0.0314 \* | Runoff | 0.0038 | 0.0014 | 0.0067 | \* |

* single applications should be marked. \*\* twa-time as required by ecotox data origin (modelling report & crop no.): 2) EnSa-18-0880, Winter Cereals 1.

**Table 8.9‑29: FOCUS Step 3 PECsw and PECsed for iodosulfuron-methyl-sodium following application of IMS+MSM+MPR OD 42 (2+10+30)**

* + **Use: winter cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, autumn application**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| **Step 3: winter cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, autumn application1)** | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~0.0897 \*~~ | ~~Drainage~~ | ~~0.0767~~ | ~~0.053~~ | ~~0.0951 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.0573 \*~~ | ~~Drainage~~ | ~~0.0506~~ | ~~0.0343~~ | ~~0.058 \*~~ |
| ~~D2~~ | ~~ditch~~ | ~~0.0802 \*~~ | ~~Drainage~~ | ~~0.0312~~ | ~~0.0217~~ | ~~0.0275 \*~~ |
| ~~D2~~ | ~~stream~~ | ~~0.0503 \*~~ | ~~Drainage~~ | ~~0.0176~~ | ~~0.0124~~ | ~~0.0159 \*~~ |
| D3 | ditch | 0.0128 \* | Spray drift | 0.0014 | 0.0005 | 0.0023 \* |
| D4 | pond | 0.0039 \* | Drainage | 0.0039 | 0.0036 | 0.0065 \* |
| D4 | stream | 0.0103 \* | Spray drift | 0.0043 | 0.0024 | 0.0034 \* |
| D5 | pond | 0.0008 \* | Drainage | 0.0008 | 0.0008 | 0.0022 \* |
| D5 | stream | 0.0117 \* | Spray drift | 0.0014 | 0.0006 | 0.0016 \* |
| ~~D6~~ | ~~ditch~~ | ~~0.0127 \*~~ | ~~Spray drift~~ | ~~0.0028~~ | ~~0.0011~~ | ~~0.003 \*~~ |
| R1 | pond | 0.0004 \* | Spray drift | 0.0004 | 0.0003 | 0.0006 \* |
| R1 | stream | 0.0107 \* | Runoff | 0.0002 | 0.0001 | 0.0007 \* |
| R3 | stream | 0.0925 \* | Runoff | 0.0075 | 0.0025 | 0.0148 \* |
| R4 | stream | 0.0242 \* | Runoff | 0.0023 | 0.0008 | 0.0044 \* |

* single applications should be marked.

\*\* twa-time as required by ecotox

data origin (modelling report & crop no.): 1) EnSa-17-0473, Winter cereals 1.

**Table 8.9‑30: FOCUS Step 3 PECsw and PECsed for iodosulfuron-methyl-sodium following application of IMS+MSM+MPR OD 42 (2+10+30)**

* + **Use: spring cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, spring application**

| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa (µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| --- | --- | --- | --- | --- | --- | --- |
| **Step 3: spring cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, spring application1)** | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~0.013 \*~~ | ~~Spray drift~~ | ~~0.0053~~ | ~~0.0019~~ | ~~0.0046 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.0102 \*~~ | ~~Spray drift~~ | ~~0.0002~~ | ~~0.0001~~ | ~~0.0007 \*~~ |
| D3 | ditch | 0.0128 \* | Spray drift | 0.0018 | 0.0006 | 0.0026 \* |
| D4 | pond | 0.0004 \* | Spray drift | 0.0004 | 0.0003 | 0.0005 \* |
| D4 | stream | 0.0103 \* | Spray drift | 0.0001 | < 0.0001 | 0.0005 \* |
| D5 | pond | 0.0004 \* | Spray drift | 0.0004 | 0.0003 | 0.0006 \* |
| D5 | stream | 0.01 \* | Spray drift | < 0.0001 | < 0.0001 | 0.0002 \* |
| R4 | stream | 0.0083 \* | Spray drift | 0.0002 | < 0.0001 | 0.0007 \* |

* single applications should be marked.

\*\* twa-time as required by ecotox

data origin (modelling report & crop no.): 1) EnSa-17-0477, Spring cereals 5.

\*\*\*\*\*\*

**Table 8.9‑31: FOCUS Step 3 PECsw and PECsed for AE F075736 following application of IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end-of winter application**

| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| --- | --- | --- | --- | --- | --- | --- |
| **metabolite AE F075736**  **Step 3: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end-of winter-spring application1)** | | | | | | |
| ~~D1~~ | ~~ditch~~ | ~~0.0348 \*~~ | ~~-~~ | ~~0.0342~~ | ~~0.0312~~ | ~~0.0211 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.0282 \*~~ | ~~-~~ | ~~0.0201~~ | ~~0.0127~~ | ~~0.0098 \*~~ |
| ~~D2~~ | ~~ditch~~ | ~~0.1583 \*~~ | ~~-~~ | ~~0.1122~~ | ~~0.0995~~ | ~~0.0559 \*~~ |
| ~~D2~~ | ~~stream~~ | ~~0.1302 \*~~ | ~~-~~ | ~~0.0697~~ | ~~0.061~~ | ~~0.0353 \*~~ |
| D3 | ditch | 0.0053 \* | - | 0.0053 | 0.0053 | 0.006 \* |
| D4 | pond | 0.0123 \* | - | 0.0123 | 0.0122 | 0.0122 \* |
| D4 | stream | 0.0065 \* | - | 0.0062 | 0.0057 | 0.0049 \* |
| D5 | pond | 0.0024 \* | - | 0.0024 | 0.0023 | 0.0024 \* |
| D5 | stream | 0.0013 \* | - | 0.0011 | 0.0011 | 0.0008 \* |
| ~~D6~~ | ~~ditch~~ | ~~0.001 \*~~ | ~~-~~ | ~~0.001~~ | ~~0.0008~~ | ~~0.0006 \*~~ |
| R1 | pond | 0.0003 \* | - | 0.0003 | 0.0003 | 0.0002 \* |
| R1 | stream | 0.0071 \* | - | 0.0004 | 0.0003 | 0.0005 \* |
| R3 | stream | 0.0133 \* | - | 0.0009 | 0.0003 | 0.0009 \* |
| R4 | stream | 0.0111 \* | - | 0.0013 | 0.0004 | 0.001 \* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

data origin (modelling report & crop no.): 1) EnSa-17-0475, Winter cereals 1.

**Table 8.9‑32: Refined FOCUS Step 3 PECsw and PECsed for AE F075736 following application of IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end-of winter application**

| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **metabolite AE F075736**  **Step 3: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end-of winter-spring application- Refined simulation based on field soil kinetics data 2)** | | | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~0.0156 \*~~ | | ~~-~~ | ~~0.0154~~ | ~~0.0142~~ | ~~0.0087~~ | ~~\*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.0134 \*~~ | | ~~-~~ | ~~0.0091~~ | ~~0.0058~~ | ~~0.0039~~ | ~~\*~~ |
| ~~D2~~ | ~~ditch~~ | ~~0.0880 \*~~ | | ~~-~~ | ~~0.0618~~ | ~~0.0554~~ | ~~0.0308~~ | ~~\*~~ |
| ~~D2~~ | ~~stream~~ | ~~0.0867 \*~~ | | ~~-~~ | ~~0.0442~~ | ~~0.0384~~ | ~~0.0215~~ | ~~\*~~ |
| D3 | ditch | 0.0002 \* | | - | 0.0002 | 0.0002 | 0.0002 | \* |
| D4 | pond | 0.0006 \* | | - | 0.0006 | 0.0006 | 0.0006 | \* |
| D4 | stream | 0.0003 | \* | - | 0.0003 | 0.0003 | 0.0002 | \* |
| D5 | pond | 0.0002 | \* | - | 0.0002 | 0.0002 | 0.0002 | \* |
| D5 | stream | 0.0002 | \* | - | <0.001 | <0.001 | <0.001 | \* |
| ~~D6~~ | ~~ditch~~ | ~~0.0003~~ | ~~\*~~ | ~~-~~ | ~~0.0003~~ | ~~0.0003~~ | ~~0.0002~~ | ~~\*~~ |
| R1 | pond | 0.0002 | \* | - | 0.0002 | 0.0002 | 0.0002 | \* |
| R1 | stream | 0.0040 | \* | - | 0.0002 | 0.0001 | 0.0003 | \* |
| R3 | stream | 0.0090 | \* | - | 0.0006 | 0.0002 | 0.0006 | \* |
| R4 | stream | 0.0062 | \* | - | 0.0007 | 0.0002 | 0.0006 | \* |

\* single applications should be marked.

\*\* twa-time as required by ecotox

data origin (modelling report & crop no.): 2) EnSa-18-0880, Winter cereals 1.

**Table 8.9‑33: FOCUS Step 3 PECsw and PECsed for AE F075736 following application of IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, autumn application**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| **metabolite AE F075736**  **Step 3: winter cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, autumn application1)** | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~0.1625 \*~~ | ~~-~~ | ~~0.1374~~ | ~~0.0885~~ | ~~0.0471 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.1095 \*~~ | ~~-~~ | ~~0.0954~~ | ~~0.0647~~ | ~~0.0345 \*~~ |
| ~~D2~~ | ~~ditch~~ | ~~0.1271 \*~~ | ~~-~~ | ~~0.0826~~ | ~~0.0686~~ | ~~0.0417 \*~~ |
| ~~D2~~ | ~~stream~~ | ~~0.0864 \*~~ | ~~-~~ | ~~0.0525~~ | ~~0.0436~~ | ~~0.0265 \*~~ |
| D3 | ditch | 0.014 \* | - | 0.014 | 0.014 | 0.0153 \* |
| D4 | pond | 0.046 \* | - | 0.0459 | 0.0453 | 0.0423 \* |
| D4 | stream | 0.0365 \* | - | 0.0292 | 0.0246 | 0.016 \* |
| D5 | pond | 0.036 \* | - | 0.0358 | 0.0351 | 0.0312 \* |
| D5 | stream | 0.022 \* | - | 0.0183 | 0.0135 | 0.0091 \* |
| ~~D6~~ | ~~ditch~~ | ~~0.04 \*~~ | ~~-~~ | ~~0.0141~~ | ~~0.011~~ | ~~0.0062 \*~~ |
| R1 | pond | < 0.0001 \* | - | < 0.0001 | < 0.0001 | < 0.0001 \* |
| R1 | stream | 0.0006 \* | - | < 0.0001 | < 0.0001 | < 0.0001 \* |
| R3 | stream | 0.025 \* | - | 0.0019 | 0.0006 | 0.0018 \* |
| R4 | stream | 0.013 \* | - | 0.0011 | 0.0004 | 0.001 \* |

* single applications should be marked. \*\* twa-time as required by ecotox data origin (modelling report & crop no.): 1) EnSa-17-0473, Winter cereals 1.

**Table 8.9‑34: FOCUS Step 3 PECsw and PECsed for AE F075736 following application of IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: spring cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, spring application**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa (µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| **metabolite AE F075736**  **Step 3: spring cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, spring application1)** | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~0.0364 \*~~ | ~~-~~ | ~~0.0349~~ | ~~0.0301~~ | ~~0.018 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.0234 \*~~ | ~~-~~ | ~~0.0213~~ | ~~0.0142~~ | ~~0.0099 \*~~ |
| D3 | ditch | 0.0046 \* | - | 0.0045 | 0.0045 | 0.0055 \* |
| D4 | pond | 0.0089 \* | - | 0.0089 | 0.0088 | 0.0089 \* |
| D4 | stream | 0.0046 \* | - | 0.0044 | 0.004 | 0.0036 \* |
| D5 | pond | 0.0017 \* | - | 0.0017 | 0.0016 | 0.0016 \* |
| D5 | stream | 0.0009 \* | - | 0.0008 | 0.0007 | 0.0005 \* |
| R4 | stream | 0.0006 \* | - | < 0.0001 | < 0.0001 | < 0.0001 \* |

* single applications should be marked. \*\* twa-time as required by ecotox data origin (modelling report & crop no.): 1) EnSa-17-0477, Spring cereals 5.

**(c) FOCUS Step 4 – PECsw/sed (maximum and TWA) of iodosulfuron-methyl-sodium and metabolite AE F075736 [for Tier 1 assessment considering mitigation options]**

**Table 8.9‑35: FOCUS Step 4 PECsw for IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end-of winter, spring application**

| **Winter**  **cereals, end of winter, spring use, 3 g a.s./ha1)** | **Scenario** |  |  | **STEP 4 - iodosulfuron-methyl-sodium** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **PECsw, max**  **(µg/L)** | | | | **7 d- PECsw,twa**  **(µg/L)** | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10m low\* | 20m high\* | 10m low\* | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m | 10 m | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~0.0197~~ | ~~0.0058~~ | ~~0.0031~~ | ~~0.0018~~ | ~~0.0031~~ | ~~0.0018~~ | ~~0.0027~~ | ~~0.0016~~ |
| ~~50 %~~ | ~~0.0101~~ | ~~0.0031~~ | ~~0.0018~~ | ~~0.0011~~ | ~~0.0018~~ | ~~0.0011~~ | ~~0.0016~~ | ~~0.0010~~ |
| ~~75 %~~ | ~~0.0053~~ | ~~0.0018~~ | ~~0.0011~~ | ~~0.0011~~ | ~~0.0011~~ | ~~0.0011~~ | ~~0.0010~~ | ~~0.0010~~ |
| ~~90 %~~ | ~~0.0024~~ | ~~0.0011~~ | ~~0.0011~~ | ~~0.0011~~ | ~~0.0011~~ | ~~0.0011~~ | ~~0.0010~~ | ~~0.0010~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.0165~~ | ~~0.0063~~ | ~~0.0034~~ | ~~0.0019~~ | ~~0.0034~~ | ~~0.0019~~ | ~~0.0006~~ | ~~0.0006~~ |
| ~~50 %~~ | ~~0.0084~~ | ~~0.0033~~ | ~~0.0019~~ | ~~0.0011~~ | ~~0.0019~~ | ~~0.0011~~ | ~~0.0006~~ | ~~0.0006~~ |
| ~~75 %~~ | ~~0.0043~~ | ~~0.0018~~ | ~~0.0011~~ | ~~0.0007~~ | ~~0.0011~~ | ~~0.0007~~ | ~~0.0006~~ | ~~0.0006~~ |
| ~~90 %~~ | ~~0.0019~~ | ~~0.0009~~ | ~~0.0007~~ | ~~0.0007~~ | ~~0.0007~~ | ~~0.0007~~ | ~~0.0006~~ | ~~0.0006~~ |
| ~~None~~ | ~~D2 Ditch~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.0639~~ | ~~0.0639~~ |
| ~~50 %~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.0639~~ | ~~0.0639~~ |
| ~~75 %~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.0639~~ | ~~0.0639~~ |
| ~~90 %~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.1540~~ | ~~0.0639~~ | ~~0.0639~~ |
| ~~None~~ | ~~D2 Stream~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0332~~ | ~~0.0332~~ |
| ~~50 %~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0332~~ | ~~0.0332~~ |
| ~~75 %~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0332~~ | ~~0.0332~~ |
| ~~90 %~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0962~~ | ~~0.0332~~ | ~~0.0332~~ |
| None | D3 Ditch | 0.0191 | 0.0053 | 0.0026 | 0.0013 | 0.0026 | 0.0013 | 0.0003 | 0.0002 |
| 50 % | 0.0095 | 0.0026 | 0.0013 | 0.0007 | 0.0013 | 0.0007 | 0.0002 | <0.0001 |
| 75 % | 0.0048 | 0.0013 | 0.0007 | 0.0003 | 0.0007 | 0.0003 | <0.0001 | <0.0001 |
| 90 % | 0.0019 | 0.0005 | 0.0003 | 0.0001 | 0.0003 | 0.0001 | <0.0001 | <0.0001 |
| None | D4 Pond | 0.0007 | 0.0006 | 0.0004 | 0.0003 | 0.0004 | 0.0003 | 0.0004 | 0.0003 |
| 50 % | 0.0003 | 0.0003 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0001 |
| 75 % | 0.0002 | 0.0002 | 0.0001 | <0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 90 % | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| None | D4 Stream | 0.0144 | 0.0054 | 0.0028 | 0.0014 | 0.0028 | 0.0014 | <0.0001 | <0.0001 |
| 50 % | 0.0072 | 0.0027 | 0.0014 | 0.0007 | 0.0014 | 0.0007 | <0.0001 | <0.0001 |
| 75 % | 0.0036 | 0.0014 | 0.0007 | 0.0004 | 0.0007 | 0.0004 | <0.0001 | <0.0001 |
| 90 % | 0.0014 | 0.0005 | 0.0003 | 0.0001 | 0.0003 | 0.0001 | <0.0001 | <0.0001 |
| None | D5 Pond | 0.0007 | 0.0006 | 0.0004 | 0.0003 | 0.0004 | 0.0003 | 0.0004 | 0.0001 |
| 50 % | 0.0003 | 0.0003 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0001 |
| 75 % | 0.0002 | 0.0002 | 0.0001 | <0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 90 % | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| None | D5 Stream | 0.0149 | 0.0055 | 0.0029 | 0.0015 | 0.0029 | 0.0015 | <0.0001 | <0.0001 |
| 50 % | 0.0074 | 0.0028 | 0.0015 | 0.0007 | 0.0015 | 0.0007 | <0.0001 | <0.0001 |
| 75 % | 0.0037 | 0.0014 | 0.0007 | 0.0004 | 0.0007 | 0.0004 | <0.0001 | <0.0001 |
| 90 % | 0.0015 | 0.0006 | 0.0003 | 0.0001 | 0.0003 | 0.0001 | <0.0001 | <0.0001 |
| ~~None~~ | ~~D6 Ditch~~ | ~~0.0190~~ | ~~0.0053~~ | ~~0.0027~~ | ~~0.0014~~ | ~~0.0027~~ | ~~0.0014~~ | ~~0.0003~~ | ~~0.0002~~ |
| ~~50 %~~ | ~~0.0095~~ | ~~0.0027~~ | ~~0.0014~~ | ~~0.0007~~ | ~~0.0014~~ | ~~0.0007~~ | ~~0.0002~~ | ~~0.0001~~ |
| ~~75 %~~ | ~~0.0048~~ | ~~0.0014~~ | ~~0.0007~~ | ~~0.0004~~ | ~~0.0007~~ | ~~0.0004~~ | ~~0.0001~~ | ~~0.0001~~ |
| ~~90 %~~ | ~~0.0020~~ | ~~0.0006~~ | ~~0.0004~~ | ~~0.0002~~ | ~~0.0004~~ | ~~0.0002~~ | ~~0.0001~~ | ~~0.0001~~ |
| None | R1 Pond | 0.0007 | 0.0006 | 0.0005 | 0.0004 | 0.0004 | 0.0003 | 0.0004 | 0.0003 |
| 50 % | 0.0005 | 0.0004 | 0.0004 | 0.0004 | 0.0002 | 0.0002 | 0.0002 | 0.0001 |
| 75 % | 0.0004 | 0.0004 | 0.0003 | 0.0003 | 0.0002 | 0.0001 | 0.0002 | <0.0001 |
| 90 % | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0001 | <0.0001 | 0.0001 | <0.0001 |
| None | R1 Stream | 0.0139 | 0.0139 | 0.0139 | 0.0139 | 0.0057 | 0.0029 | 0.0003 | 0.0002 |
| 50 % | 0.0139 | 0.0139 | 0.0139 | 0.0139 | 0.0057 | 0.0029 | 0.0003 | 0.0002 |
| 75 % | 0.0139 | 0.0139 | 0.0139 | 0.0139 | 0.0057 | 0.0029 | 0.0003 | 0.0002 |
| 90 % | 0.0139 | 0.0139 | 0.0139 | 0.0139 | 0.0057 | 0.0029 | 0.0003 | 0.0002 |
| None | R3 Stream | 0.0428 | 0.0428 | 0.0428 | 0.0428 | 0.0189 | 0.0098 | 0.0013 | 0.0007 |
| 50 % | 0.0428 | 0.0428 | 0.0428 | 0.0428 | 0.0189 | 0.0098 | 0.0013 | 0.0007 |
| 75 % | 0.0428 | 0.0428 | 0.0428 | 0.0428 | 0.0189 | 0.0098 | 0.0013 | 0.0007 |
| 90 % | 0.0428 | 0.0428 | 0.0428 | 0.0428 | 0.0189 | 0.0098 | 0.0013 | 0.0007 |
| None | R4 Stream | 0.0292 | 0.0292 | 0.0292 | 0.0292 | 0.0133 | 0.0070 | 0.0016 | 0.0008 |
| 50 % | 0.0292 | 0.0292 | 0.0292 | 0.0292 | 0.0133 | 0.0070 | 0.0016 | 0.0008 |
| 75 % | 0.0292 | 0.0292 | 0.0292 | 0.0292 | 0.0133 | 0.0070 | 0.0016 | 0.0008 |
| 90 % | 0.0292 | 0.0292 | 0.0292 | 0.0292 | 0.0133 | 0.0070 | 0.0016 | 0.0008 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux data origin (modelling report & crop no.): 1) EnSa-17-0475, Winter cereals 1.

**Table 8.9‑36: FOCUS Step 4 PECsw for IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, autumn application**

| **Winter**  **cereals,**  **autumn use,**  **2 g a.s./ha1)** | **Scenario** |  |  | **STEP 4 - iodosulfuron-methyl-sodium** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **PECsw, max**  **(µg/L)** | | | | **7 d- PECsw,twa**  **(µg/L)** | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10m low\* | 20m high\* | 10m low\* | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m | 10 m | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0766~~ | ~~0.0766~~ |
| ~~50 %~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0766~~ | ~~0.0766~~ |
| ~~75 %~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0766~~ | ~~0.0765~~ |
| ~~90 %~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0897~~ | ~~0.0896~~ | ~~0.0897~~ | ~~0.0896~~ | ~~0.0765~~ | ~~0.0765~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0506~~ | ~~0.0506~~ |
| ~~50 %~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0506~~ | ~~0.0506~~ |
| ~~75 %~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0506~~ | ~~0.0506~~ |
| ~~90 %~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0573~~ | ~~0.0506~~ | ~~0.0506~~ |
| ~~None~~ | ~~D2 Ditch~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0312~~ | ~~0.0312~~ |
| ~~50 %~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0312~~ | ~~0.0312~~ |
| ~~75 %~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0312~~ | ~~0.0312~~ |
| ~~90 %~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0802~~ | ~~0.0312~~ | ~~0.0312~~ |
| ~~None~~ | ~~D2 Stream~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0176~~ | ~~0.0176~~ |
| ~~50 %~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0176~~ | ~~0.0176~~ |
| ~~75 %~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0176~~ | ~~0.0176~~ |
| ~~90 %~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0503~~ | ~~0.0176~~ | ~~0.0176~~ |
| None | D3 Ditch | 0.0128 | 0.0033 | 0.0020 | 0.0010 | 0.0020 | 0.0010 | 0.0002 | 0.0001 |
| 50 % | 0.0064 | 0.0016 | 0.0010 | 0.0005 | 0.0010 | 0.0005 | 0.0001 | <0.0001 |
| 75 % | 0.0032 | 0.0008 | 0.0005 | 0.0003 | 0.0005 | 0.0003 | <0.0001 | <0.0001 |
| 90 % | 0.0013 | 0.0003 | 0.0002 | <0.0001 | 0.0002 | <0.0001 | <0.0001 | <0.0001 |
| None | D4 Pond | 0.0039 | 0.0039 | 0.0039 | 0.0038 | 0.0039 | 0.0038 | 0.0038 | 0.0038 |
| 50 % | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0037 |
| 75 % | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0037 | 0.0037 |
| 90 % | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0038 | 0.0037 | 0.0037 |
| None | D4 Stream | 0.0103 | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0043 | 0.0043 |
| 50 % | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0043 | 0.0043 |
| 75 % | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0043 | 0.0043 |
| 90 % | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0055 | 0.0043 | 0.0043 |
| None | D5 Pond | 0.0008 | 0.0008 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 |
| 50 % | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 |
| 75 % | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 |
| 90 % | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0006 |
| None | D5 Stream | 0.0117 | 0.0045 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0014 | 0.0014 |
| 50 % | 0.0059 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0014 | 0.0014 |
| 75 % | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0014 | 0.0014 |
| 90 % | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0014 | 0.0014 |
| ~~None~~ | ~~D6 Ditch~~ | ~~0.0127~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0028~~ | ~~0.0028~~ |
| ~~50 %~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0028~~ | ~~0.0028~~ |
| ~~75 %~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0028~~ | ~~0.0028~~ |
| ~~90 %~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0109~~ | ~~0.0028~~ | ~~0.0028~~ |
| None | R1 Pond | 0.0004 | 0.0004 | 0.0003 | 0.0002 | 0.0003 | 0.0002 | 0.0003 | 0.0002 |
| 50 % | 0.0002 | 0.0002 | 0.0002 | 0.0001 | 0.0002 | 0.0001 | 0.0001 | <0.0001 |
| 75 % | 0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 90 % | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| None | R1 Stream | 0.0107 | 0.0107 | 0.0107 | 0.0107 | 0.0043 | 0.0022 | <0.0001 | <0.0001 |
| 50 % | 0.0107 | 0.0107 | 0.0107 | 0.0107 | 0.0043 | 0.0022 | <0.0001 | <0.0001 |
| 75 % | 0.0107 | 0.0107 | 0.0107 | 0.0107 | 0.0043 | 0.0022 | <0.0001 | <0.0001 |
| 90 % | 0.0107 | 0.0107 | 0.0107 | 0.0107 | 0.0043 | 0.0022 | <0.0001 | <0.0001 |
| None | R3 Stream | 0.0925 | 0.0925 | 0.0925 | 0.0925 | 0.0416 | 0.0217 | 0.0033 | 0.0017 |
| 50 % | 0.0925 | 0.0925 | 0.0925 | 0.0925 | 0.0416 | 0.0217 | 0.0032 | 0.0017 |
| 75 % | 0.0925 | 0.0925 | 0.0925 | 0.0925 | 0.0416 | 0.0217 | 0.0032 | 0.0017 |
| 90 % | 0.0925 | 0.0925 | 0.0925 | 0.0925 | 0.0416 | 0.0217 | 0.0032 | 0.0017 |
| None | R4 Stream | 0.0242 | 0.0242 | 0.0242 | 0.0242 | 0.0109 | 0.0057 | 0.0010 | 0.0005 |
| 50 % | 0.0242 | 0.0242 | 0.0242 | 0.0242 | 0.0109 | 0.0057 | 0.0010 | 0.0005 |
| 75 % | 0.0242 | 0.0242 | 0.0242 | 0.0242 | 0.0109 | 0.0057 | 0.0010 | 0.0005 |
| 90 % | 0.0242 | 0.0242 | 0.0242 | 0.0242 | 0.0109 | 0.0057 | 0.0010 | 0.0005 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux data origin (modelling report & crop no.): 1) EnSa-17-0473, Winter cereals 1.

**Table 8.9‑37: FOCUS Step 4 PECsw for IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: spring cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, spring application**

| **Spring cereals, spring use, 2 g a.s./ha1)** | **Scenario** |  |  | **STEP 4 - iodosulfuron-methyl-sodium** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **PECsw, max**  **(µg/L)** | | | | **7 d- PECsw,twa**  **(µg/L)** | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10m low\* | 20m high\* | 10m low\* | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m | 10 m | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~0.0130~~ | ~~0.0034~~ | ~~0.0021~~ | ~~0.0011~~ | ~~0.0021~~ | ~~0.0011~~ | ~~0.0009~~ | ~~0.0005~~ |
| ~~50 %~~ | ~~0.0066~~ | ~~0.0018~~ | ~~0.0011~~ | ~~0.0006~~ | ~~0.0011~~ | ~~0.0006~~ | ~~0.0005~~ | ~~0.0003~~ |
| ~~75 %~~ | ~~0.0034~~ | ~~0.0009~~ | ~~0.0006~~ | ~~0.0004~~ | ~~0.0006~~ | ~~0.0004~~ | ~~0.0003~~ | ~~0.0002~~ |
| ~~90 %~~ | ~~0.0014~~ | ~~0.0004~~ | ~~0.0003~~ | ~~0.0002~~ | ~~0.0003~~ | ~~0.0002~~ | ~~0.0002~~ | ~~0.0002~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.0102~~ | ~~0.0039~~ | ~~0.0022~~ | ~~0.0010~~ | ~~0.0022~~ | ~~0.0010~~ | ~~0.0001~~ | ~~0.0001~~ |
| ~~50 %~~ | ~~0.0051~~ | ~~0.0020~~ | ~~0.0011~~ | ~~0.0005~~ | ~~0.0011~~ | ~~0.0005~~ | ~~0.0001~~ | ~~0.0001~~ |
| ~~75 %~~ | ~~0.0026~~ | ~~0.0011~~ | ~~0.0006~~ | ~~0.0003~~ | ~~0.0006~~ | ~~0.0003~~ | ~~0.0001~~ | ~~0.0001~~ |
| ~~90 %~~ | ~~0.0011~~ | ~~0.0005~~ | ~~0.0003~~ | ~~0.0002~~ | ~~0.0003~~ | ~~0.0002~~ | ~~0.0001~~ | ~~0.0001~~ |
| None | D3 Ditch | 0.0128 | 0.0033 | 0.0020 | 0.0010 | 0.0020 | 0.0010 | 0.0003 | 0.0001 |
| 50 % | 0.0064 | 0.0016 | 0.0010 | 0.0005 | 0.0010 | 0.0005 | 0.0001 | <0.0001 |
| 75 % | 0.0032 | 0.0008 | 0.0005 | 0.0003 | 0.0005 | 0.0003 | <0.0001 | <0.0001 |
| 90 % | 0.0013 | 0.0003 | 0.0002 | <0.0001 | 0.0002 | <0.0001 | <0.0001 | <0.0001 |
| None | D4 Pond | 0.0004 | 0.0004 | 0.0003 | 0.0002 | 0.0003 | 0.0002 | 0.0003 | 0.0002 |
| 50 % | 0.0002 | 0.0002 | 0.0002 | 0.0001 | 0.0002 | 0.0001 | 0.0001 | <0.0001 |
| 75 % | 0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 90 % | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| None | D4 Stream | 0.0103 | 0.0039 | 0.0021 | 0.0009 | 0.0021 | 0.0009 | <0.0001 | <0.0001 |
| 50 % | 0.0051 | 0.0020 | 0.0011 | 0.0005 | 0.0011 | 0.0005 | <0.0001 | <0.0001 |
| 75 % | 0.0026 | 0.0010 | 0.0005 | 0.0002 | 0.0005 | 0.0002 | <0.0001 | <0.0001 |
| 90 % | 0.0010 | 0.0004 | 0.0002 | <0.0001 | 0.0002 | <0.0001 | <0.0001 | <0.0001 |
| None | D5 Pond | 0.0004 | 0.0004 | 0.0003 | 0.0002 | 0.0003 | 0.0002 | 0.0003 | 0.0002 |
| 50 % | 0.0002 | 0.0002 | 0.0002 | 0.0001 | 0.0002 | 0.0001 | 0.0001 | <0.0001 |
| 75 % | 0.0001 | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 90 % | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| None | D5 Stream | 0.0100 | 0.0038 | 0.0021 | 0.0009 | 0.0021 | 0.0009 | <0.0001 | <0.0001 |
| 50 % | 0.0050 | 0.0019 | 0.0010 | 0.0004 | 0.0010 | 0.0004 | <0.0001 | <0.0001 |
| 75 % | 0.0025 | 0.0010 | 0.0005 | 0.0002 | 0.0005 | 0.0002 | <0.0001 | <0.0001 |
| 90 % | 0.0010 | 0.0004 | 0.0002 | <0.0001 | 0.0002 | <0.0001 | <0.0001 | <0.0001 |
| None | R4 Stream | 0.0083 | 0.0032 | 0.0017 | 0.0007 | 0.0017 | 0.0007 | <0.0001 | <0.0001 |
| 50 % | 0.0041 | 0.0016 | 0.0009 | 0.0004 | 0.0009 | 0.0004 | <0.0001 | <0.0001 |
| 75 % | 0.0021 | 0.0008 | 0.0004 | 0.0002 | 0.0004 | 0.0002 | <0.0001 | <0.0001 |
| 90 % | 0.0008 | 0.0003 | 0.0002 | <0.0001 | 0.0002 | <0.0001 | <0.0001 | <0.0001 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux

data origin (modelling report & crop no.): 1) EnSa-17-0477, Spring cereals 5.

**Table 8.9‑38: FOCUS Step 4 PECsw for metabolite AE F075736 following application of**

**IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 3 g iodosulfuron-methyl-sodium/ha, end-of winter, spring application**

| **Winter**  **cereals, end of winter, spring use, 3 g a.s./ha1)** | **Scenario** |  |  | | **STEP 4 - metabolite AE F075736** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | **PECsw, max**  **(µg/L)** | | | | | | | | **7 d- PECsw,twa**  **(µg/L)** | | |
| Nozzle reduction | Vegetated strip (m) | None | None | | None | | None | | 10m low\* | | 20m high\* | | 10m low\* | | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | | 10 m | | 20 m | | 10 m | | 20 m | | 10 m | | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~0.0348~~ | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0342~~ | | ~~0.0342~~ |
| ~~50 %~~ | ~~0.0348~~ | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0342~~ | | ~~0.0342~~ |
| ~~75 %~~ | ~~0.0348~~ | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0342~~ | | ~~0.0342~~ |
| ~~90 %~~ | ~~0.0348~~ | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0348~~ | | ~~0.0342~~ | | ~~0.0342~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.0282~~ | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0201~~ | | ~~0.0201~~ |
| ~~50 %~~ | ~~0.0282~~ | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0201~~ | | ~~0.0201~~ |
| ~~75 %~~ | ~~0.0282~~ | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0201~~ | | ~~0.0201~~ |
| ~~90 %~~ | ~~0.0282~~ | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0282~~ | | ~~0.0201~~ | | ~~0.0201~~ |
| ~~None~~ | ~~D2 Ditch~~ | ~~0.1583~~ | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1122~~ | | ~~0.1122~~ |
| ~~50 %~~ | ~~0.1583~~ | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1122~~ | | ~~0.1122~~ |
| ~~75 %~~ | ~~0.1583~~ | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1122~~ | | ~~0.1122~~ |
| ~~90 %~~ | ~~0.1583~~ | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1583~~ | | ~~0.1122~~ | | ~~0.1122~~ |
| ~~None~~ | ~~D2 Stream~~ | ~~0.1302~~ | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.0697~~ | | ~~0.0697~~ |
| ~~50 %~~ | ~~0.1302~~ | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.0697~~ | | ~~0.0697~~ |
| ~~75 %~~ | ~~0.1302~~ | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.0697~~ | | ~~0.0697~~ |
| ~~90 %~~ | ~~0.1302~~ | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.1302~~ | | ~~0.0697~~ | | ~~0.0697~~ |
| None | D3 Ditch | 0.0053 | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 |
| 50 % | 0.0053 | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 |
| 75 % | 0.0053 | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 |
| 90 % | 0.0053 | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 | | 0.0053 |
| None | D4 Pond | 0.0123 | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 |
| 50 % | 0.0123 | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 |
| 75 % | 0.0123 | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 |
| 90 % | 0.0123 | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 | | 0.0123 |
| None | D4 Stream | 0.0065 | 0.0065 | | 0.0065 | | 0.0065 | | 0.0065 | | 0.0065 | | 0.0062 | | 0.0062 |
| 50 % | 0.0065 | 0.0065 | | 0.0065 | | 0.0065 | | 0.0065 | | 0.0065 | | 0.0062 | | 0.0062 |
| 75 % | 0.0065 | 0.0065 | | 0.0065 | | 0.0065 | | 0.0065 | | 0.0065 | | 0.0062 | | 0.0062 |
| 90 % | 0.0065 | 0.0065 | | 0.0065 | | 0.0065 | | 0.0065 | | 0.0065 | | 0.0062 | | 0.0062 |
| None | D5 Pond | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | 0.0024 |
| 50 % | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | 0.0024 |
| 75 % | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | 0.0024 |
| 90 % | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | | 0.0024 | 0.0024 |
| None | D5 Stream | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0011 | 0.0011 |
| 50 % | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0011 | 0.0011 |
| 75 % | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0011 | 0.0011 |
| 90 % | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0013 | | 0.0011 | 0.0011 |
| ~~None~~ | ~~D6 Ditch~~ | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | ~~0.0010~~ |
| ~~50 %~~ | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | ~~0.0010~~ |
| ~~75 %~~ | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | ~~0.0010~~ |
| ~~90 %~~ | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | | ~~0.0010~~ | ~~0.0010~~ |
| None | R1 Pond | 0.0003 | | 0.0003 | | 0.0002 | | 0.0002 | | 0.0001 | | <0.0001 | | 0.0001 | <0.0001 |
| 50 % | 0.0002 | | 0.0002 | | 0.0002 | | 0.0002 | | <0.0001 | | <0.0001 | | <0.0001 | <0.0001 |
| 75 % | 0.0002 | | 0.0002 | | 0.0002 | | 0.0002 | | <0.0001 | | <0.0001 | | <0.0001 | <0.0001 |
| 90 % | 0.0002 | | 0.0002 | | 0.0002 | | 0.0002 | | <0.0001 | | <0.0001 | | <0.0001 | <0.0001 |
| None | R1 Stream | 0.0071 | | 0.0071 | | 0.0071 | | 0.0071 | | 0.0029 | | 0.0015 | | 0.0002 | <0.0001 |
| 50 % | 0.0071 | | 0.0071 | | 0.0071 | | 0.0071 | | 0.0029 | | 0.0015 | | 0.0002 | <0.0001 |
| 75 % | 0.0071 | | 0.0071 | | 0.0071 | | 0.0071 | | 0.0029 | | 0.0015 | | 0.0002 | <0.0001 |
| 90 % | 0.0071 | | 0.0071 | | 0.0071 | | 0.0071 | | 0.0029 | | 0.0015 | | 0.0002 | <0.0001 |
| None | R3 Stream | 0.0133 | | 0.0133 | | 0.0133 | | 0.0133 | | 0.0059 | | 0.0030 | | 0.0004 | 0.0002 |
| 50 % | 0.0133 | | 0.0133 | | 0.0133 | | 0.0133 | | 0.0059 | | 0.0030 | | 0.0004 | 0.0002 |
| 75 % | 0.0133 | | 0.0133 | | 0.0133 | | 0.0133 | | 0.0059 | | 0.0030 | | 0.0004 | 0.0002 |
| 90 % | 0.0133 | | 0.0133 | | 0.0133 | | 0.0133 | | 0.0059 | | 0.0030 | | 0.0004 | 0.0002 |
| None | R4 Stream | 0.0111 | | 0.0111 | | 0.0111 | | 0.0111 | | 0.0050 | | 0.0026 | | 0.0006 | 0.0003 |
| 50 % | 0.0111 | | 0.0111 | | 0.0111 | | 0.0111 | | 0.0050 | | 0.0026 | | 0.0006 | 0.0003 |
| 75 % | 0.0111 | | 0.0111 | | 0.0111 | | 0.0111 | | 0.0050 | | 0.0026 | | 0.0006 | 0.0003 |
| 90 % | 0.0111 | | 0.0111 | | 0.0111 | | 0.0111 | | 0.0050 | | 0.0026 | | 0.0006 | 0.0003 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux data origin (modelling report & crop no.): 1) EnSa-17-0475, Winter cereals 1.

**Table 8.9‑39: FOCUS Step 4 PECsw for metabolite AE F075736 following application of**

**IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, autumn application**

| **Winter**  **cereals,**  **autumn use,**  **2 g a.s./ha1)** | **Scenario** |  |  | **STEP 4 - metabolite AE F075736** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **PECsw, max**  **(µg/L)** | | | | **7 d- PECsw,twa**  **(µg/L)** | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10m low\* | 20m high\* | 10m low\* | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m | 10 m | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1374~~ | ~~0.1374~~ |
| ~~50 %~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1374~~ | ~~0.1374~~ |
| ~~75 %~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1374~~ | ~~0.1374~~ |
| ~~90 %~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1625~~ | ~~0.1374~~ | ~~0.1374~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.0954~~ | ~~0.0954~~ |
| ~~50 %~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.0954~~ | ~~0.0954~~ |
| ~~75 %~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.0954~~ | ~~0.0954~~ |
| ~~90 %~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.1095~~ | ~~0.0954~~ | ~~0.0954~~ |
| ~~None~~ | ~~D2 Ditch~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.0826~~ | ~~0.0826~~ |
| ~~50 %~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.0826~~ | ~~0.0826~~ |
| ~~75 %~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.0826~~ | ~~0.0826~~ |
| ~~90 %~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.1271~~ | ~~0.0826~~ | ~~0.0826~~ |
| ~~None~~ | ~~D2 Stream~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0525~~ | ~~0.0525~~ |
| ~~50 %~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0525~~ | ~~0.0525~~ |
| ~~75 %~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0525~~ | ~~0.0525~~ |
| ~~90 %~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0864~~ | ~~0.0525~~ | ~~0.0525~~ |
| None | D3 Ditch | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 |
| 50 % | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 |
| 75 % | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 |
| 90 % | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 | 0.0140 |
| None | D4 Pond | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0459 | 0.0459 |
| 50 % | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0459 | 0.0459 |
| 75 % | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0459 | 0.0459 |
| 90 % | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0460 | 0.0459 | 0.0459 |
| None | D4 Stream | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0292 | 0.0292 |
| 50 % | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0292 | 0.0292 |
| 75 % | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0292 | 0.0292 |
| 90 % | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0365 | 0.0292 | 0.0292 |
| None | D5 Pond | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0358 | 0.0358 |
| 50 % | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0358 | 0.0358 |
| 75 % | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0358 | 0.0358 |
| 90 % | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0360 | 0.0358 | 0.0358 |
| None | D5 Stream | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0183 | 0.0183 |
| 50 % | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0183 | 0.0183 |
| 75 % | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0183 | 0.0183 |
| 90 % | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0220 | 0.0183 | 0.0183 |
| ~~None~~ | ~~D6 Ditch~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0141~~ | ~~0.0141~~ |
| ~~50 %~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0141~~ | ~~0.0141~~ |
| ~~75 %~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0141~~ | ~~0.0141~~ |
| ~~90 %~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0400~~ | ~~0.0141~~ | ~~0.0141~~ |
| None | R1 Pond | <0.0001 | <0.0001 | <0.0001 | <0.001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 50 % | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 75 % | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| 90 % | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| None | R1 Stream | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0002 | 0.0001 | <0.0001 | <0.0001 |
| 50 % | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0002 | 0.0001 | <0.0001 | <0.0001 |
| 75 % | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0002 | 0.0001 | <0.0001 | <0.0001 |
| 90 % | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0002 | 0.0001 | <0.0001 | <0.0001 |
| None | R3 Stream | 0.0250 | 0.0250 | 0.0250 | 0.0250 | 0.0113 | 0.0059 | 0.0009 | 0.0005 |
| 50 % | 0.0250 | 0.0250 | 0.0250 | 0.0250 | 0.0113 | 0.0059 | 0.0009 | 0.0005 |
| 75 % | 0.0250 | 0.0250 | 0.0250 | 0.0250 | 0.0113 | 0.0059 | 0.0009 | 0.0005 |
| 90 % | 0.0250 | 0.0250 | 0.0250 | 0.0250 | 0.0113 | 0.0059 | 0.0009 | 0.0005 |
| None | R4 Stream | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0059 | 0.0031 | 0.0005 | 0.0003 |
| 50 % | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0059 | 0.0031 | 0.0005 | 0.0003 |
| 75 % | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0059 | 0.0031 | 0.0005 | 0.0003 |
| 90 % | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0059 | 0.0031 | 0.0005 | 0.0003 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux data origin (modelling report & crop no.): 1) EnSa-17-0473, Winter cereals 1.

**Table 8.9‑40: FOCUS Step 4 PECsw for metabolite AE F075736 following application of IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: spring cereals, 1 × 2 g iodosulfuron-methyl-sodium/ha, spring application**

| **Spring cereals, spring use, 2 g a.s./ha1)** | **Scenario** |  |  | **STEP 4 – metabolite AE F075736** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **PECsw, max**  **(µg/L)** | | | | **7 d- PECsw,twa**  **(µg/L)** | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10m low\* | 20m high\* | 10m low\* | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m | 10 m | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0349~~ | ~~0.0349~~ |
| ~~50 %~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0349~~ | ~~0.0349~~ |
| ~~75 %~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0349~~ | ~~0.0349~~ |
| ~~90 %~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0364~~ | ~~0.0349~~ | ~~0.0349~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0213~~ | ~~0.0213~~ |
| ~~50 %~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0213~~ | ~~0.0213~~ |
| ~~75 %~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0213~~ | ~~0.0213~~ |
| ~~90 %~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0234~~ | ~~0.0213~~ | ~~0.0213~~ |
| None | D3 Ditch | 0.0046 | 0.0046 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 |
| 50 % | 0.0046 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 |
| 75 % | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 |
| 90 % | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 | 0.0045 |
| None | D4 Pond | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 |
| 50 % | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 |
| 75 % | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 |
| 90 % | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 | 0.0089 |
| None | D4 Stream | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0044 | 0.0044 |
| 50 % | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0044 | 0.0044 |
| 75 % | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0044 | 0.0044 |
| 90 % | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0046 | 0.0044 | 0.0044 |
| None | D5 Pond | 0.0017 | 0.0017 | 0.0017 | 0.0016 | 0.0017 | 0.0016 | 0.0016 | 0.0016 |
| 50 % | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 |
| 75 % | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 |
| 90 % | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 |
| None | D5 Stream | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0008 | 0.0008 |
| 50 % | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0008 | 0.0008 |
| 75 % | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0008 | 0.0008 |
| 90 % | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | 0.0008 | 0.0008 |
| None | R4 Stream | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0003 | 0.0001 | <0.0001 | <0.0001 |
| 50 % | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0003 | 0.0001 | <0.0001 | <0.0001 |
| 75 % | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0003 | 0.0001 | <0.0001 | <0.0001 |
| 90 % | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0003 | 0.0001 | <0.0001 | <0.0001 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux

data origin (modelling report & crop no.): 1) EnSa-17-0477, Spring cereals 5.

#### Mesosulfuron-methyl and its metabolites

For mesosulfuron-methyl, agreed endpoints were used as input to exposure modelling as follows:

**Table 8.9‑41: Input parameters related to active substance mesosulfuron-methyl and metabolites for PECsw/sed calculations STEP 1/2 and 3/4**

| **Compound** | **Mesosulfuron-methyl** | **AE F154851** | **AE F160459** | **AE F099095** | **AE F092944** | **Value in accordance to**  **EU endpoint**  **y/n/**  **Reference** |
| --- | --- | --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 503.5 | 489.5 | 489.5 | 198.2 | 155.2 | Y/ EFSA  Journal  2016;14(10):4  584 |
| Saturated vapour pressure (Pa) | Step 1+2: not required    Step 3/4:  3.5×10-12  (20°C) | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Y/ EFSA  Journal  2016;14(10):4  584 |
| Water solubility (mg/L) | 483  (20°C, pH 7)\* | 200000 (20°C, pH 7)# | 10000 (20°C, pH 7)# | 190  (20°C, pH 7)# | 5200  (20°C, pH 7)# | \*Y/ EFSA  Journal 2016;14(10):4 584.  #Y/ KCA  2.14/05,07, 15,17; values listed in RAR  Vol 3 – B.8  (PPP) – Atlantis OD  (07/2016) |
| Diffusion coefficient in water (m²/d) | Step 1+2: not required    Step 3/4:  4.3 × 10-5 | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | default |
| Diffusion coefficient in air  (m²/d) | Step 1+2: not required    Step 3/4:  0.43 | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | default |
| Kfoc (mL/g) | 64  (geomean, n = 9)1 | 65  (geomean, n = 3) | 19.3  (geomean, n = 5) | 334  (geomean, n = 11) | 293.9 (geomean, n = 23) | Y/ EFSA  Journal  2016;14(10):4  584 |
| Freundlich  Exponent  1/n | Step 1+2: not required    Step 3/4:  0.91 (arithmetic mean, n = 9) | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Y/ EFSA  Journal  2016;14(10):4  584 |
| Plant Uptake | Step 1+2: not required    Step 3/4: 0 | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Y/ EFSA  Journal  2016;14(10):4  584 |
| Wash-Off factor from Crop (1/m) | Step 1+2: not required    Step 3/4: 50 | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | default |
| DT50,soil (d) | Tier 1 – SFO: 49.72 (geomean, normalisation to 10 kPa or pF2, 20 °C with  Q10 of 2.58, n =  9) | 45.22 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 8) | 74.14 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 5) | 55.6 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 10) | 16.93 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 13) | Y/ EFSA  Journal  2016;14(10):4  584 |
| DT50,water (d) | 43  (geomean, total system, n = 4) | 54.7  (geomean, total system n = 4) | 87.8  (geomean, total system, n = 4) | 1000 (default) | 1000 (default) | Y/ EFSA  Journal  2016;14(10):4  584 |
| DT50,sed (d) | Step 1+2:  43  (geomean, total  system, n = 4)    Step 3/4:  1000 (default) | 54.7  (geomean, total system, n = 4) | 87.8  (geomean, total system, n = 4) | 1000 (default) | 1000 (default) | Y/ EFSA  Journal  2016;14(10):4  584 |
| DT50,whole system (d) | 43  (geomean, total system, n = 4) | 54.7  (geomean, total system, n = 4) | 87.8  (geomean, total system, n = 4) | 1000 (default) | 1000 (default) | Y/ EFSA  Journal  2016;14(10):4  584 |
| Maximum  occurrence observed (% molar basis with respect to the parent) | - | Soil: 16.2 Water/ sediment: 4.9 | Soil: 8.9 Water/ sediment:  21.6 | Soil: 29.2 Water/ sediment: 0.9 | Soil: 10.1 Water/ sediment: 3.2 | Y/ EFSA  Journal  2016;14(10):4  584 |

1 Kom = 37.1 ml/g

**Table 8.9‑42: Input parameters related to active substance mesosulfuron-methyl metabolites for PECsw/sed calculations STEP 1/2 (continued)**

| **Compound** | **AE F160460** | **AE F140584** | **AE F147447** | **BCS-**  **CV14885** | **BCS-**  **CO60720** | **Value in accordance to EU endpoint y/n/**  **Reference** |
| --- | --- | --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 475.5 | 322.4 | 290.3 | 393.4 | 407.4 | Y/ EFSA  Journal  2016;14(10):4  584 |
| Saturated vapour pressure (Pa) | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required |  |
| Water solubility (mg/L) | 100000  (20°C, pH 7)\* | 100  (20°C, pH 7)\* | 150000  (20°C, pH 7)\* | 2000  (20°C, pH 7)\* | 1000  (default value)\* | \*Y/ KCA  2.14/09,11, 13,19; values listed in RAR of mesosulfuron-methyl, Vol 3  – B.8 (PPP) –  Atlantis OD  (07/2016) |
| Diffusion coefficient in water (m²/d) | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required |  |
| Diffusion coefficient in air  (m²/d) | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required |  |
| Kfoc (mL/g) | 12.2  (geomean, n = 5) | 0  (default) | 5.1  (geomean, n = 5) | 17.7  (geomean, n = 4) | 0  (default) | Y/ EFSA  Journal  2016;14(10):4  584 |
| Freundlich  Exponent  1/n | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required |  |
| Plant Uptake | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required |  |
| Wash-Off factor from Crop (1/m) | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required | Step 1+2: not required |  |
| DT50,soil (d) | 28.61 (geomean, normalisation to 10 kPa or pF2, 20 °C with  Q10 of 2.58, n =  5) | 4.22 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 5) | 102.15 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 5) | 97.6 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 4) | 0.001 (default) | Y/ EFSA  Journal  2016;14(10):4  584 |
| DT50,water (d) | 325.9  (geomean, total system, n = 4) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | Y/ EFSA  Journal  2016;14(10):4  584 |
| DT50,sed (d) | 325.9  (geomean, total system, n = 4) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | Y/ EFSA  Journal  2016;14(10):4  584 |
| DT50,whole system (d) | 325.9  (geomean, total system, n = 4) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | Y/ EFSA  Journal  2016;14(10):4  584 |
| Maximum  occurrence observed (% molar basis with respect to the parent) | Soil: 8.6 Water/ sediment: 8.4 | Soil: 7.1 Water/ sediment: 1.9 | Soil: 5.8 Water/ sediment:  10.9 | Soil: 5.0 Water/ sediment:  22.0 | Soil: 0.001 Water/ sediment:  13.1 | Y/ EFSA  Journal  2016;14(10):4  584 |

**(a) FOCUS Steps 1-2 – Risk envelope PECsw/sed of mesosulfuron-methyl and all metabolites [for screening level assessment]**

**Table 8.9‑43: FOCUS Step 1,2 PECsw and PECsed for mesosulfuron-methyl following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | --- | 4.7448 - | RunOff/Drain. | 4.4775 | 4.0162 | 2.9813 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.9938 \*  1.8652 \* | RunOff/Drain. RunOff/Drain | 0.9370  1.7610 | 0.8404  1.5797 | 0.6238 \*  1.1726 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.9938 \*  1.4295 \* | RunOff/Drain. RunOff/Drain | 0.9370  1.3490 | 0.8404  1.2100 | 0.6238 \*  0.8982 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 2.3009 \*  1.8652 \* | RunOff/Drain. RunOff/Drain | 2.1731  1.7610 | 1.9493  1.5797 | 1.4470 \*  1.1726 \* |
| Step 3 | Not required |  |  |  |  |  |

* single applications marked. \*\* twa-time as required by ecotox

**Table 8.9‑44: FOCUS Step 1, 2 PECsw and PECsed for AE F154851 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 0.9504 - | RunOff/Drain. | 0.9090 | 0.8340 | 0.6135 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.1837 \*  0.3615 \* | RunOff/Drain. RunOff/Drain. | 0.1756  0.3458 | 0.1611  0.3172 | 0.1181 \*  0.2337 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.1837 \*  0.2726 \* | RunOff/Drain. RunOff/Drain. | 0.1756  0.2607 | 0.1611  0.2392 | 0.1181 \*  0.1759 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 0.4503 \* 0.3615 \* | RunOff/Drain. RunOff/Drain. | 0.4308 0.3458 | 0.3953 0.3172 | 0.2914 \* 0.2337 \* |
| Step 3 | Not required |  |  |  |  |  |

* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑45: FOCUS Step 1, 2 PECsw and PECsed for AE F160459 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 1.4744 - | RunOff/Drain. | 1.4337 | 1.3580 | 0.2822 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.3025 \* 0.5774 \* | RunOff/Drain. RunOff/Drain. | 0.2941 0.5615 | 0.2785 0.5318 | 0.0579 \* 0.1105 \* |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.3025 \*  0.4399 \* | RunOff/Drain. RunOff/Drain. | 0.2941  0.4278 | 0.2785  0.4052 | 0.0579 \*  0.0842 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 0.7148 \*  0.5774 \* | RunOff/Drain. RunOff/Drain. | 0.6952  0.5615 | 0.6585  0.5318 | 0.1368 \*  0.1105 \* |
| Step 3 | Not required |  |  |  |  |  |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑46: FOCUS Step 1, 2 PECsw and PECsed for AE F099095 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 0.4104 - | RunOff/Drain. | 0.4093 | 0.4073 | 1.3692 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.0784 \*  0.1563 \* | RunOff/Drain. RunOff/Drain. | 0.0781  0.1559 | 0.0778  0.1552 | 0.2614 \*  0.5217 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.0784 \*  0.1173 \* | RunOff/Drain. RunOff/Drain. | 0.0781  0.1170 | 0.0778  0.1165 | 0.2614 \*  0.3915 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 0.1953 \*  0.1563 \* | RunOff/Drain. RunOff/Drain. | 0.1948  0.1559 | 0.1939  0.1552 | 0.6520 \*  0.5217 \* |
| Step 3 | Not required |  |  |  |  |  |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑47: FOCUS Step 1, 2 PECsw and PECsed for AE F092944 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 0.1486 - | RunOff/Drain. | 0.1479 | 0.1472 | 0.4354 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.0268 \*  0.0525 \* | RunOff/Drain. RunOff/Drain. | 0.0266  0.0522 | 0.0265  0.0520 | 0.0783 \*  0.1538 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.0268 \*  0.0396 \* | RunOff/Drain. RunOff/Drain. | 0.0266  0.0394 | 0.0265  0.0392 | 0.0783 \*  0.1160 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 0.0653 \* 0.0525 \* | RunOff/Drain. RunOff/Drain. | 0.0651 0.0522 | 0.0647 0.0520 | 0.1915 \* 0.1538 \* |
| Step 3 | Not required |  |  |  |  |  |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑48**: **FOCUS Step 1, 2 PECsw and PECsed for AE F160460 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d-**  **PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 0.8008 - | RunOff/Drain. | 0.7947 | 0.7830 | 0.0975 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.1571 \*  0.3035 \* | RunOff/Drain. RunOff/Drain. | 0.1559  0.3012 | 0.1536  0.2967 | 0.0191 \*  0.0369 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.1571 \*  0.2303 \* | RunOff/Drain. RunOff/Drain. | 0.1559  0.2285 | 0.1536  0.2252 | 0.0191 \*  0.0280 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 0.3766 \*  0.3035 \* | RunOff/Drain. RunOff/Drain. | 0.3738  0.3012 | 0.3683  0.2967 | 0.0459 \*  0.0369 \* |
| Step 3 | Not required |  |  |  |  |  |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑49: FOCUS Step 1, 2 PECsw and PECsed for AE F140584 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 0.2898 - | RunOff/Drain. | 0.2891 | 0.2877 | <0.001 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.0368 \*  0.0718 \* | RunOff/Drain. RunOff/Drain. | 0.0367  0.0717 | 0.0365  0.0713 | <0.0001 \*  <0.0001 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.0368 \*  0.0543 \* | RunOff/Drain. RunOff/Drain. | 0.0367  0.0542 | 0.0365  0.0539 | <0.0001 \*  <0.0001 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 0.0894 \* 0.0718 \* | RunOff/Drain. RunOff/Drain. | 0.0891 0.0717 | 0.0887 0.0713 | <0.0001 \*  <0.0001 \* |
| Step 3 | Not required |  |  |  |  |  |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑50: FOCUS Step 1, 2 PECsw and PECsed for AE F147447 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 0.4868 - | RunOff/Drain. | 0.4856 | 0.4833 | 0.0248 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.1000 \* 0.1913 \* | RunOff/Drain. RunOff/Drain. | 0.0997 0.1909 | 0.0992 0.1899 | 0.0051 \* 0.0098 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.1000 \*  0.1457 \* | RunOff/Drain. RunOff/Drain. | 0.0997  0.1453 | 0.0992  0.1446 | 0.0051 \*  0.0074 \* |
| N-Europe | Oct. - Feb. | 0.2370 \* | RunOff/Drain. | 0.2364 | 0.2353 | 0.0121 \* |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| S-Europe | (Autumn) | 0.1913 \* | RunOff/Drain. | 0.1909 | 0.1899 | 0.0098 \* |
| Step 3 | Not required |  |  |  |  |  |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑51: FOCUS Step 1, 2 PECsw and PECsed for BCS-CV14885 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 1.0542 - | RunOff/Drain. | 1.0285 | 0.9806 | 0.1852 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.2186 \*  0.4145 \* | RunOff/Drain. RunOff/Drain. | 0.2133  0.4045 | 0.2033  0.3856 | 0.0384 \*  0.0728 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.2186 \*  0.3166 \* | RunOff/Drain. RunOff/Drain. | 0.2133  0.3089 | 0.2033  0.2945 | 0.0384 \*  0.0556 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 0.5125 \*  0.4145 \* | RunOff/Drain. RunOff/Drain. | 0.5001  0.4045 | 0.4768  0.3856 | 0.0901 \*  0.0728 \* |
| Step 3 | Not required |  |  |  |  |  |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**Table 8.9‑52: FOCUS Step 1, 2 PECsw and PECsed for BCS-CO60720 following single application to cereals - for generic risk envelope covering all uses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa**  **(µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| Step 1 | - | 0.5446 - | RunOff/Drain. | 0.5433 | 0.5407 | <0.001 - |
| Step 2 |  |  |  |  |  |  |
| N-Europe S-Europe | Mar. - May (Spring) | 0.1148 \* 0.2151 \* | RunOff/Drain. RunOff/Drain. | 0.1146 0.2146 | 0.1140 0.2135 | <0.0001 \*  <0.0001 \* |
| N-Europe S-Europe | Jun. - Sep. (Summer) | 0.1148 \*  0.1650 \* | RunOff/Drain. RunOff/Drain. | 0.1146  0.1646 | 0.1140  0.1638 | <0.0001 \*  <0.0001 \* |
| N-Europe S-Europe | Oct. - Feb. (Autumn) | 0.2652 \* 0.2151 \* | RunOff/Drain. RunOff/Drain. | 0.2646 0.2146 | 0.2633 0.2135 | <0.0001 \*  <0.0001 \* |
| Step 3 | Not required |  |  |  |  |  |

\* single applications should be marked.

\*\* twa-time as required by ecotox

**(b) FOCUS Step 3 – PECsw/sed (maximum and TWA) of mesosulfuron-methyl [for Tier 1 assessment]**

**Table 8.9‑53: FOCUS Step 3 PECsw and PECsed for mesosulfuron-methyl following single application of IMS+MSM+MPR OD 42 (2+10+30)**

**– Use: winter cereals, 1 × 15 g mesosulfuron-methyl/ha, end of winter to spring application**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa (µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| **Step 3: winter cereals, 1 × 15 g mesosulfuron-methyl/ha, end of winter to spring application1)** | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~0.2187 \*~~ | ~~Drainage~~ | ~~0.1926~~ | ~~0.1504~~ | ~~0.4013 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.1410 \*~~ | ~~Drainage~~ | ~~0.1264~~ | ~~0.0996~~ | ~~0.2351 \*~~ |
| ~~D2~~ | ~~ditch~~ | ~~1.6040 \*~~ | ~~Drainage~~ | ~~0.9150~~ | ~~0.7687~~ | ~~1.0930 \*~~ |
| ~~D2~~ | ~~stream~~ | ~~1.0230 \*~~ | ~~Drainage~~ | ~~0.5414~~ | ~~0.4361~~ | ~~0.6295 \*~~ |
| D3 | ditch | 0.0982 \* | Spray drift | 0.0156 | 0.0074 | 0.0276 \* |
| D4 | pond | 0.0412 \* | Drainage | 0.0410 | 0.0400 | 0.1044 \* |
| D4 | stream | 0.0770 \* | Spray drift | 0.0306 | 0.0260 | 0.0417 \* |
| D5 | pond | 0.0198 \* | Spray drift | 0.0194 | 0.0187 | 0.0511 \* |
| D5 | stream | 0.0827 \* | Spray drift | 0.0097 | 0.0092 | 0.0241 \* |
| ~~D6~~ | ~~ditch~~ | ~~0.1009 \*~~ | ~~Spray drift~~ | ~~0.0133~~ | ~~0.0092~~ | ~~0.0250 \*~~ |
| R1 | pond | 0.0063 \* | Runoff | 0.0059 | 0.0055 | 0.0105 \* |
| R1 | stream | 0.1008 \* | Runoff | 0.0099 | 0.0055 | 0.0179 \* |
| R3 | stream | 0.3099 \* | Runoff | 0.0217 | 0.0088 | 0.0494 \* |
| R4 | stream | 0.2646 \* | Runoff | 0.0321 | 0.0113 | 0.0565 \* |

* single applications should be marked. \*\* twa-time as required by ecotox data origin (modelling report & crop no.): 1) Ensa-17-0403, Winter cereals 1.

**Table 8.9‑54: FOCUS Step 3 PECsw and PECsed for mesosulfuron-methyl following single application of IMS+MSM+MPR OD 42 (2+10+30)**

* + **Use: winter cereals, 1 × 10 g mesosulfuron-methyl/ha, autumn application**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa (µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| **Step 3: winter cereals, 1 × 10 g mesosulfuron-methyl/ha, autumn application1)** | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~1.3580 \*~~ | ~~Drainage~~ | ~~1.2640~~ | ~~0.9308~~ | ~~1.3010 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.8475 \*~~ | ~~Drainage~~ | ~~0.7944~~ | ~~0.5987~~ | ~~0.8042 \*~~ |
| ~~D2~~ | ~~ditch~~ | ~~1.3980 \*~~ | ~~Drainage~~ | ~~0.5944~~ | ~~0.5372~~ | ~~0.9251 \*~~ |
| ~~D2~~ | ~~stream~~ | ~~0.8795 \*~~ | ~~Drainage~~ | ~~0.3500~~ | ~~0.3130~~ | ~~0.5398 \*~~ |
| D3 | ditch | 0.0662 \* | Spray drift | 0.0099 | 0.0053 | 0.0270 \* |
| D4 | pond | 0.1414 \* | Drainage | 0.1412 | 0.1379 | 0.2929 \* |
| D4 | stream | 0.1678 \* | Drainage | 0.1339 | 0.0916 | 0.1160 \* |
| D5 | pond | 0.1018 \* | Drainage | 0.1007 | 0.0964 | 0.2516 \* |
| D5 | stream | 0.1450 \* | Drainage | 0.0692 | 0.0361 | 0.0795 \* |
| ~~D6~~ | ~~ditch~~ | ~~0.3850 \*~~ | ~~Drainage~~ | ~~0.1168~~ | ~~0.0545~~ | ~~0.1286 \*~~ |
| R1 | pond | 0.0022 \* | Spray drift | 0.0021 | 0.0019 | 0.0040 \* |
| R1 | stream | 0.0474 \* | Runoff | 0.0011 | 0.0006 | 0.0036 \* |
| R3 | stream | 0.5158 \* | Runoff | 0.0416 | 0.0139 | 0.0862 \* |
| R4 | stream | 0.2641 \* | Runoff | 0.0250 | 0.0086 | 0.0474 \* |

* single applications should be marked.

\*\* twa-time as required by ecotox

data origin (modelling report & crop no.): 1) Ensa-17-0402, Winter cereals 3.

**Table 8.9‑55: FOCUS Step 3 PECsw and PECsed for mesosulfuron-methyl following single application of IMS+MSM+MPR OD 42 (2+10+30)**

* + **Use: spring cereals, 1 × 10 g mesosulfuron-methyl/ha, spring application**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario**    **FOCUS** | **Waterbody** | **Max PECsw**  **(μg/L)\*** | **Dominant entry route** | **7 d- PECsw,twa (µg/L)\*\*** | **21 d- PECsw,twa**  **(µg/L)\*\*** | **Max PECsed**  **(μg/kg)\*** |
| **Step 3: spring cereals, 1 × 10 g mesosulfuron-methyl/ha, spring application1)** | | | | | |  |
| ~~D1~~ | ~~ditch~~ | ~~0.2085 \*~~ | ~~Drainage~~ | ~~0.2003~~ | ~~0.1740~~ | ~~0.3342 \*~~ |
| ~~D1~~ | ~~stream~~ | ~~0.1731 \*~~ | ~~Drainage~~ | ~~0.1236~~ | ~~0.1074~~ | ~~0.1850 \*~~ |
| D3 | ditch | 0.0657 \* | Spray drift | 0.0111 | 0.0053 | 0.0203 \* |
| D4 | pond | 0.0288 \* | Drainage | 0.0286 | 0.0280 | 0.0762 \* |
| D4 | stream | 0.0545 \* | Spray drift | 0.0216 | 0.0179 | 0.0332 \* |
| D5 | pond | 0.0118 \* | Drainage | 0.0117 | 0.0112 | 0.0360 \* |
| D5 | stream | 0.0541 \* | Spray drift | 0.0057 | 0.0049 | 0.0139 \* |
| R4 | stream | 0.0418 \* | Spray drift | 0.0021 | 0.0007 | 0.0040 \* |

* single applications should be marked.

\*\* twa-time as required by ecotox

data origin (modelling report & crop no.): 1) Ensa-17-0406, Spring cereals 3.

**(c) FOCUS Step 4 – PECsw/sed (maximum and TWA) of mesosulfuron-methyl [for Tier 1 assessment considering mitigation options]**

**Table 8.9‑58: FOCUS Step 4 PECsw for mesosulfuron-methyl following application of IMS+MSM+MPR OD 42 (2+10+30)**

**- Use: winter cereals, 1 × 15 g mesosulfuron-methyl /ha, end-of winter-spring application**

| **Winter**  **cereals, end of winter, spring use, 15 g a.s./ha1)** | **Scenario** |  |  | **STEP 4 - mesosulfuron-methyl** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **PECsw, max**  **(µg/L)** | | | | **7 d- PECsw,twa**  **(µg/L)** | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10m low\* | 20m high\* | 10m low\* | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m | 10 m | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.1926~~ | ~~0.1926~~ |
| ~~50 %~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.1926~~ | ~~0.1926~~ |
| ~~75 %~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.1926~~ | ~~0.1926~~ |
| ~~90 %~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.2187~~ | ~~0.1926~~ | ~~0.1926~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1264~~ | ~~0.1264~~ |
| ~~50 %~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1264~~ | ~~0.1264~~ |
| ~~75 %~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1264~~ | ~~0.1264~~ |
| ~~90 %~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1410~~ | ~~0.1264~~ | ~~0.1264~~ |
| ~~None~~ | ~~D2 Ditch~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~0.9150~~ | ~~0.9150~~ |
| ~~50 %~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~0.9150~~ | ~~0.9150~~ |
| ~~75 %~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~0.9150~~ | ~~0.9150~~ |
| ~~90 %~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~1.6040~~ | ~~0.9150~~ | ~~0.9150~~ |
| ~~None~~ | ~~D2 Stream~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~0.5414~~ | ~~0.5414~~ |
| ~~50 %~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~0.5414~~ | ~~0.5414~~ |
| ~~75 %~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~0.5414~~ | ~~0.5414~~ |
| ~~90 %~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~1.0230~~ | ~~0.5414~~ | ~~0.5414~~ |
| None | D3 Ditch | 0.0982 | 0.0289 | 0.0171 | 0.0105 | 0.0171 | 0.0105 | 0.0051 | 0.0042 |
| 50 % | 0.0507 | 0.0161 | 0.0102 | 0.0069 | 0.0102 | 0.0069 | 0.0042 | 0.0039 |
| 75 % | 0.0270 | 0.0097 | 0.0067 | 0.0051 | 0.0067 | 0.0051 | 0.0039 | 0.0039 |
| 90 % | 0.0128 | 0.0058 | 0.0046 | 0.0040 | 0.0046 | 0.0040 | 0.0039 | 0.0039 |
| None | D4 Pond | 0.0412 | 0.0412 | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0409 | 0.0409 |
| 50 % | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0409 | 0.0409 |
| 75 % |  | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0409 | 0.0409 |
| 90 % | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0411 | 0.0409 | 0.0409 |
| None | D4 Stream | 0.0770 | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0306 | 0.0306 |
| 50 % | 0.0408 | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0306 | 0.0306 |
| 75 % | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0306 | 0.0306 |
| 90 % | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0385 | 0.0306 | 0.0306 |
| None | D5 Pond | 0.0198 | 0.0193 | 0.0185 | 0.0179 | 0.0185 | 0.0179 | 0.0182 | 0.0176 |
| 50 % | 0.0181 | 0.0179 | 0.0175 | 0.0172 | 0.0175 | 0.0172 | 0.0173 | 0.0170 |
| 75 % | 0.0173 | 0.0172 | 0.0170 | 0.0168 | 0.0170 | 0.0168 | 0.0168 | 0.0167 |
| 90 % | 0.0168 | 0.0168 | 0.0168 | 0.0168 | 0.0168 | 0.0168 | 0.0167 | 0.0167 |
| None | D5 Stream | 0.0827 | 0.0352 | 0.0223 | 0.0153 | 0.0223 | 0.0153 | 0.0097 | 0.0097 |
| 50 % | 0.0452 | 0.0215 | 0.0150 | 0.0121 | 0.0150 | 0.0121 | 0.0097 | 0.0097 |
| 75 % | 0.0265 | 0.0146 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0097 | 0.0097 |
| 90 % | 0.0152 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0097 | 0.0097 |
| ~~None~~ | ~~D6 Ditch~~ | ~~0.1009~~ | ~~0.0323~~ | ~~0.0206~~ | ~~0.0141~~ | ~~0.0206~~ | ~~0.0141~~ | ~~0.0083~~ | ~~0.0083~~ |
| ~~50 %~~ | ~~0.0540~~ | ~~0.0197~~ | ~~0.0138~~ | ~~0.0106~~ | ~~0.0138~~ | ~~0.0106~~ | ~~0.0083~~ | ~~0.0083~~ |
| ~~75 %~~ | ~~0.0305~~ | ~~0.0133~~ | ~~0.0104~~ | ~~0.0104~~ | ~~0.0104~~ | ~~0.0104~~ | ~~0.0083~~ | ~~0.0083~~ |
| ~~90 %~~ | ~~0.0164~~ | ~~0.0104~~ | ~~0.0104~~ | ~~0.0104~~ | ~~0.0104~~ | ~~0.0104~~ | ~~0.0083~~ | ~~0.0083~~ |
| None | R1 Pond | 0.0063 | 0.0059 | 0.0054 | 0.0050 | 0.0030 | 0.0018 | 0.0028 | 0.0017 |
| 50 % | 0.0052 | 0.0050 | 0.0047 | 0.0045 | 0.0023 | 0.0013 | 0.0022 | 0.0012 |
| 75 % | 0.0046 | 0.0045 | 0.0044 | 0.0043 | 0.0020 | 0.0011 | 0.0019 | 0.0010 |
| 90 % | 0.0043 | 0.0042 | 0.0042 | 0.0042 | 0.0018 | 0.0009 | 0.0017 | 0.0009 |
| None | R1 Stream | 0.1008 | 0.1008 | 0.1008 | 0.1008 | 0.0415 | 0.0210 | 0.0043 | 0.0022 |
| 50 % | 0.1008 | 0.1008 | 0.1008 | 0.1008 | 0.0415 | 0.0210 | 0.0043 | 0.0022 |
| 75 % | 0.1008 | 0.1008 | 0.1008 | 0.1008 | 0.0415 | 0.0210 | 0.0043 | 0.0022 |
| 90 % | 0.1008 | 0.1008 | 0.1008 | 0.1008 | 0.0415 | 0.0210 | 0.0043 | 0.0022 |
| None | R3 Stream | 0.3099 | 0.3099 | 0.3099 | 0.3099 | 0.1370 | 0.0710 | 0.0095 | 0.0049 |
| 50 % | 0.3099 | 0.3099 | 0.3099 | 0.3099 | 0.1370 | 0.0710 | 0.0095 | 0.0049 |
| 75 % | 0.3099 | 0.3099 | 0.3099 | 0.3099 | 0.1370 | 0.0710 | 0.0095 | 0.0049 |
| 90 % | 0.3099 | 0.3099 | 0.3099 | 0.3099 | 0.1370 | 0.0710 | 0.0095 | 0.0049 |
| None | R4 Stream | 0.2646 | 0.2646 | 0.2646 | 0.2646 | 0.1203 | 0.0631 | 0.0146 | 0.0076 |
| 50 % | 0.2646 | 0.2646 | 0.2646 | 0.2646 | 0.1203 | 0.0631 | 0.0146 | 0.0076 |
| 75 % | 0.2646 | 0.2646 | 0.2646 | 0.2646 | 0.1203 | 0.0631 | 0.0146 | 0.0076 |
| 90 % | 0.2646 | 0.2646 | 0.2646 | 0.2646 | 0.1203 | 0.0631 | 0.0146 | 0.0076 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux data origin (modelling report & crop no.): 1) Ensa-17-0403, Winter cereals 1.

**Table 8.9‑59: FOCUS Step 4 PECsw for mesosulfuron-methyl following application of**

**IMS+MSM+MPR OD 42 (2+10+30)**

* + **Use: winter cereals, 1 × 10 g mesosulfuron-methyl/ha, autumn application**

| **Winter**  **cereals,**  **autumn use,**  **10 g a.s./ha1)** | **Scenario** | **STEP 4 - mesosulfuron-methyl** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PECsw, max**  **(µg/L)** | | | | | | **7 d- PECsw,twa**  **(µg/L)** | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10m low\* | 20m high\* | 10m low\* | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m | 10 m | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.2640~~ | ~~1.2640~~ |
| ~~50 %~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.2640~~ | ~~1.2640~~ |
| ~~75 %~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.2640~~ | ~~1.2640~~ |
| ~~90 %~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.3580~~ | ~~1.2640~~ | ~~1.2640~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.7944~~ | ~~0.7944~~ |
| ~~50 %~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.7944~~ | ~~0.7944~~ |
| ~~75 %~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.7944~~ | ~~0.7944~~ |
| ~~90 %~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.8475~~ | ~~0.7944~~ | ~~0.7944~~ |
| ~~None~~ | ~~D2 Ditch~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~0.5944~~ | ~~0.5944~~ |
| ~~50 %~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~0.5944~~ | ~~0.5944~~ |
| ~~75 %~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~0.5944~~ | ~~0.5944~~ |
| ~~90 %~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~1.3980~~ | ~~0.5944~~ | ~~0.5944~~ |
| ~~None~~ | ~~D2 Stream~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.3500~~ | ~~0.3500~~ |
| ~~50 %~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.3500~~ | ~~0.3500~~ |
| ~~75 %~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.3500~~ | ~~0.3500~~ |
| ~~90 %~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.8795~~ | ~~0.3500~~ | ~~0.3500~~ |
| None | D3 Ditch | 0.0662 | 0.0200 | 0.0121 | 0.0075 | 0.0121 | 0.0075 | 0.0039 | 0.0034 |
| 50 % | 0.0346 | 0.0115 | 0.0075 | 0.0052 | 0.0075 | 0.0052 | 0.0034 | 0.0032 |
| 75 % | 0.0188 | 0.0072 | 0.0052 | 0.0041 | 0.0052 | 0.0041 | 0.0032 | 0.0031 |
| 90 % | 0.0093 | 0.0046 | 0.0039 | 0.0034 | 0.0039 | 0.0034 | 0.0030 | 0.0030 |
| None | D4 Pond | 0.1414 | 0.1413 | 0.1411 | 0.1409 | 0.1411 | 0.1409 | 0.1409 | 0.1407 |
| 50 % | 0.1410 | 0.1409 | 0.1408 | 0.1407 | 0.1408 | 0.1407 | 0.1406 | 0.1405 |
| 75 % | 0.1408 | 0.1408 | 0.1407 | 0.1407 | 0.1407 | 0.1407 | 0.1405 | 0.1404 |
| 90 % | 0.1407 | 0.1406 | 0.1406 | 0.1406 | 0.1406 | 0.1406 | 0.1404 | 0.1404 |
| None | D4 Stream | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1339 | 0.1339 |
| 50 % | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1339 | 0.1339 |
| 75 % | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1339 | 0.1339 |
| 90 % | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1678 | 0.1339 | 0.1339 |
| None | D5 Pond | 0.1018 | 0.1017 | 0.1016 | 0.1015 | 0.1016 | 0.1015 | 0.1005 | 0.1004 |
| 50 % | 0.1015 | 0.1015 | 0.1014 | 0.1014 | 0.1014 | 0.1014 | 0.1003 | 0.1003 |
| 75 % | 0.1014 | 0.1014 | 0.1013 | 0.1013 | 0.1013 | 0.1013 | 0.1003 | 0.1002 |
| 90 % | 0.1013 | 0.1013 | 0.1013 | 0.1013 | 0.1013 | 0.1013 | 0.1002 | 0.1002 |
| None | D5 Stream | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.0692 | 0.0692 |
| 50 % | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.0692 | 0.0692 |
| 75 % | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.0692 | 0.0692 |
| 90 % | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.1450 | 0.0692 | 0.0692 |
| ~~None~~ | ~~D6 Ditch~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.1168~~ | ~~0.1168~~ |
| ~~50 %~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.1168~~ | ~~0.1168~~ |
| ~~75 %~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.1168~~ | ~~0.1168~~ |
| ~~90 %~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.3850~~ | ~~0.1168~~ | ~~0.1168~~ |
| None | R1 Pond | 0.0022 | 0.0019 | 0.0014 | 0.0009 | 0.0014 | 0.0009 | 0.0013 | 0.0008 |
| 50 % | 0.0011 | 0.0009 | 0.0007 | 0.0005 | 0.0007 | 0.0004 | 0.0007 | 0.0004 |
| 75 % | 0.0006 | 0.0005 | 0.0005 | 0.0004 | 0.0003 | 0.0002 | 0.0003 | 0.0002 |
| 90 % | 0.0004 | 0.0004 | 0.0003 | 0.0003 | 0.0002 | 0.0001 | 0.0002 | 0.0001 |
| None | R1 Stream | 0.0474 | 0.0474 | 0.0474 | 0.0474 | 0.0191 | 0.0096 | 0.0002 | 0.0001 |
| 50 % | 0.0474 | 0.0474 | 0.0474 | 0.0474 | 0.0191 | 0.0096 | 0.0002 | 0.0001 |
| 75 % | 0.0474 | 0.0474 | 0.0474 | 0.0474 | 0.0191 | 0.0096 | 0.0002 | 0.0001 |
| 90 % | 0.0474 | 0.0474 | 0.0474 | 0.0474 | 0.0191 | 0.0096 | 0.0002 | 0.0001 |
| None | R3 Stream | 0.5158 | 0.5158 | 0.5158 | 0.5158 | 0.2319 | 0.1211 | 0.0182 | 0.0095 |
| 50 % | 0.5158 | 0.5158 | 0.5158 | 0.5158 | 0.2319 | 0.1211 | 0.0180 | 0.0094 |
| 75 % | 0.5158 | 0.5158 | 0.5158 | 0.5158 | 0.2319 | 0.1211 | 0.0179 | 0.0094 |
| 90 % | 0.5158 | 0.5158 | 0.5158 | 0.5158 | 0.2319 | 0.1211 | 0.0179 | 0.0093 |
| None | R4 Stream | 0.2641 | 0.2641 | 0.2641 | 0.2641 | 0.1192 | 0.0623 | 0.0112 | 0.0059 |
| 50 % | 0.2641 | 0.2641 | 0.2641 | 0.2641 | 0.1192 | 0.0623 | 0.0112 | 0.0059 |
| 75 % | 0.2641 | 0.2641 | 0.2641 | 0.2641 | 0.1192 | 0.0623 | 0.0112 | 0.0059 |
| 90 % | 0.2641 | 0.2641 | 0.2641 | 0.2641 | 0.1192 | 0.0623 | 0.0112 | 0.0059 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux data origin (modelling report & crop no.): 1) Ensa-17-0402, Winter cereals 3.

**Table 8.9‑60: FOCUS Step 4 PECsw for mesosulfuron-methyl following application of IMS+MSM+MPR OD 42 (2+10+30)**

* + **Use: spring cereals, 1 × 10 g mesosulfuron-methyl/ha, spring application**

| **Spring cereals, spring use, 10 g a.s./ha1)** | **Scenario** | **STEP 4 - mesosulfuron-methyl** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PECsw, max**  **(µg/L)** | | | | | | **7 d- PECsw,twa**  **(µg/L)** | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10m low\* | 20m high\* | 10m low\* | 20m high\* |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m | 10 m | 20 m |
| ~~None~~ | ~~D1 Ditch~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2003~~ | ~~0.2003~~ |
| ~~50 %~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2003~~ | ~~0.2003~~ |
| ~~75 %~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2003~~ | ~~0.2003~~ |
| ~~90 %~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2085~~ | ~~0.2003~~ | ~~0.2003~~ |
| ~~None~~ | ~~D1 Stream~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1236~~ | ~~0.1236~~ |
| ~~50 %~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1236~~ | ~~0.1236~~ |
| ~~75 %~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1236~~ | ~~0.1236~~ |
| ~~90 %~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1731~~ | ~~0.1236~~ | ~~0.1236~~ |
| None | D3 Ditch | 0.0657 | 0.0194 | 0.0115 | 0.0069 | 0.0115 | 0.0069 | 0.0036 | 0.0030 |
| 50 % | 0.0340 | 0.0109 | 0.0069 | 0.0046 | 0.0069 | 0.0046 | 0.0030 | 0.0028 |
| 75 % | 0.0182 | 0.0066 | 0.0046 | 0.0035 | 0.0046 | 0.0035 | 0.0028 | 0.0028 |
| 90 % | 0.0087 | 0.0040 | 0.0032 | 0.0028 | 0.0032 | 0.0028 | 0.0028 | 0.0028 |
| None | D4 Pond | 0.0288 | 0.0288 | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0286 | 0.0286 |
| 50 % | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0286 | 0.0286 |
| 75 % | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0285 | 0.0285 |
| 90 % | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0287 | 0.0285 | 0.0285 |
| None | D4 Stream | 0.0545 | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0216 | 0.0216 |
| 50 % | 0.0285 | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0216 | 0.0216 |
| 75 % | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0216 | 0.0216 |
| 90 % | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0265 | 0.0216 | 0.0216 |
| None | D5 Pond | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0117 | 0.0117 |
| 50 % | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0116 | 0.0116 |
| 75 % | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0116 | 0.0116 |
| 90 % | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0118 | 0.0116 | 0.0116 |
| None | D5 Stream | 0.0541 | 0.0221 | 0.0133 | 0.0121 | 0.0133 | 0.0121 | 0.0057 | 0.0057 |
| 50 % | 0.0289 | 0.0129 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0057 | 0.0057 |
| 75 % | 0.0163 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0057 | 0.0057 |
| 90 % | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0121 | 0.0057 | 0.0057 |
| None | R4 Stream | 0.0418 | 0.0171 | 0.0171 | 0.0171 | 0.0080 | 0.0041 | 0.0009 | 0.0005 |
| 50 % | 0.0209 | 0.0171 | 0.0171 | 0.0171 | 0.0077 | 0.0040 | 0.0009 | 0.0005 |
| 75 % | 0.0171 | 0.0171 | 0.0171 | 0.0171 | 0.0077 | 0.0040 | 0.0009 | 0.0005 |
| 90 % | 0.0171 | 0.0171 | 0.0171 | 0.0171 | 0.0077 | 0.0040 | 0.0009 | 0.0005 |

* low and high fractional reduction in the runoff and erosion through volume, mass and flux data origin (modelling report & crop no.): 1) Ensa-17-0406, Spring cereals 3.

#### Mefenpyr-diethyl and its metabolites

Table 8.9‑61: Input parameters related to mefenpyr-diethyl and its metabolites for PECsw/sed calculations STEP 1/2

| Compound | Mefenpyr-diethyl | AE F113225 | AE F094270 | AE F109453 | AE F114952 | AE 2211046 | Value in accordance to EU endpoint y/n/  Reference |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Molecular weight (g/mol) | 373.26 | 345.2 | 271.11 | 317.13 | 345.18 | 391.26 | Mefenpyr-diethyl DAR |
| Saturated vapour pressure (Pa) | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 |
| Water solubility (mg/L) | 20 | 5.826 | 50 | 1173 | 563 | 1000 (conservative value) |
| Kfoc (mL/g) | 609.9 (geometric mean, n=6) | 109.5 (geometric mean, n=3) | 176.8 (geometric mean, n=5) | 10 (conservative value) | 10 (conservative value) | 1320 (QSAR) |
| Freundlich Exponent  1/n | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 |
| Plant Uptake | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 | not required for Step 1+2 |
| DT50,soil (d) | 2.4 (lab. geometric mean, n=5) | 6.1 (lab. geometric mean, n=5) | 19.6 (field geometric mean, n=3) | 1000 | 1000 | 1000 |
| DT50,water (d) | 1.1 | 42.5 | 109.2 | 23 | 19.9 | 1000 |
| DT50,sed (d) | 1.1 | 42.5 | 109.2 | 23 | 19.9 | 1000 |
| DT50,whole system (d) | 1.1 | 42.5 | 109.2 | 23 | 19.9 | 1000 |
| Maximum occurrence observed (% molar basis with respect to the parent) | - | Soil: 44.1%  Water/Sediment: 82.8% | Soil: 72.2%  Water/Sediment: 62.4% | Soil: 0.001%  Water/Sediment: 46.5% | Soil: 11.5%  Water/Sediment: 18.6% | Soil: 11%  Water/Sediment: 0.001% |
| Formation fraction in soil | - | - | - | - | - | - |

PECsw/sed

Table 8.9‑62: FOCUS Step 1 and 2 PECsw and PECsed for mefenpyr-diethyl following single application to winter and spring cereals.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Scenario** | **Mefenpyr-diethyl** | | | |
| **Max PECsw (μg/L)** | | **Max PECsed (μg/kg)** | |
| **Step 1** | **Step 2** | **Step 1** | **Step 2** |
| NE Oct-Feb | 8.69 | 1.32 | 50.45 | 8.03 |
| NE Mar-May | 0.54 | 3.27 |
| NE Jun-Sep | 0.54 | 3.27 |
| SE Oct-Feb | 1.06 | 6.44 |
| SE Mar-May | 1.06 | 6.44 |
| SE Jun-Sep | 0.80 | 4.86 |

Metabolites of mefenpyr-diethyl

Table 8.9‑63: FOCUS Step 1 and 2 PECsw and PECsed for mefenpyr-diethyl metabolites following single application to winter and spring cereals

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Scenario** | **AE F113225** | | | | **AE F094270** | | | |
| **Surface water PEC µg/l** | | **Sediment PEC µg/kg** | | **Surface water PEC µg/l** | | **Sediment PEC µg/kg** | |
| **Step 1** | **Step 2** | **Step 1** | **Step 2** | **Step 1** | **Step 2** | **Step 1** | **Step 2** |
| **NE Oct-Feb** | 15.68 | 3.54 | 16.85 | 3.8 | 12.05 | 3.79 | 21.11 | 6.64 |
| **NE Mar-May** | 1.58 | 1.69 | 1.61 | 2.81 |
| **NE Jun-Sep** | 1.58 | 1.69 | 1.61 | 2.81 |
| **SE Oct-Feb** | 2.89 | 3.10 | 3.06 | 5.36 |
| **SE Mar-May** | 2.89 | 3.10 | 3.06 | 5.36 |
| **SE Jun-Sep** | 2.23 | 2.39 | 2.34 | 4.09 |
| **Scenario** | **AE F109453** | | | | **AE F114952** | | | |
| **Surface water PEC µg/l** | | **Sediment PEC µg/kg** | | **Surface water PEC µg/l** | | **Sediment PEC µg/kg** | |
| **Step 1** | **Step 2** | **Step 1** | **Step 2** | **Step 1** | **Step 2** | **Step 1** | **Step 2** |
| **NE Oct-Feb** | 6.01 | 1.06 | 0.58 | 0.1 | 4.19 | 1.25 | 0.41 | 0.12 |
| **NE Mar-May** | 0.51 | 0.05 | 0.54 | 0.05 |
| **NE Jun-Sep** | 0.51 | 0.05 | 0.54 | 0.05 |
| **SE Oct-Feb** | 0.88 | 0.09 | 1.01 | 0.10 |
| **SE Mar-May** | 0.88 | 0.09 | 1.01 | 0.10 |
| **SE Jun-Sep** | 0.7 | 0.07 | 0.77 | 0.08 |
| **Scenario** | **AE 2211046** | | | |
| **Surface water PEC µg/l** | | **Sediment PEC µg/kg** | |
| **Step 1** | **Step 2** | **Step 1** | **Step 2** |
| **NE Oct-Feb** | 0.63 | 0.31 | 8.27 | 4.12 |
| **NE Mar-May** | 0.12 | 1.65 |
| **NE Jun-Sep** | 0.12 | 1.65 |
| **SE Oct-Feb** | 0.25 | 3.30 |
| **SE Mar-May** | 0.25 | 3.30 |
| **SE Jun-Sep** | 0.19 | 2.47 |

The above PECsw values can be used to perform the risk assessment for non-target organisms. Moreover, the risk assessment is covered by the one

in the DAR (Vol. 3 – B.8 (2011)) performed at higher applied rate (‘risk envelope’ approach).

**zRMS comments:**

The submitted by Applicant calculations Meso-Iodo OD-Life were accepted. Due the fact that scenarios D3, D4, D5, R1, R3, R4.are relevant for the Central Zone calculations for the remaining have not been evaluated.

**Iodosulfuron-methyl-sodium**

PECsw has been calculated according to the GAP using the models FOCUS STEPS 1-2 and 3 and 4 and using the input parameters established in the EU reviews: iodosulfuron-methyl-sodium (EFSA Journal 2016;14(4):4453

**Mesosulfuron-methyl**

PECgw has been calculated according to the GAP using the models FOCUS STEPS 1-2 and 3 and 4 and using the input parameters established in the EU reviews: and mesosulfuron-methyl summarized in the EFSA conclusion (EFSA Journal 2016;14(10): 4584).

The PECsw/sed for active substances were carried out at Step 4 according to FOCUS L&M Guidance and Working document of the central zone in the authorisation of plant protection products, environmental fate and behaviour; 2018.

Nevertheless, additional simulations may be required by the cMS that do not accept calculations performed using FOCUS models. The acceptable predicted environmental concentrations for active substance and their matabolites are appropriate to be used for the subsequent risk assessment.

Based on assessment, unacceptable exposure of surface water to the safener mefenpyr-diethyl and its metabolites after application of 054-01-05 within the risk envelope GAP is unlikely to occur.

## Fate and behaviour in air (KCP 9.3, KCP 9.3.1)

### Fate and behaviour of iodosulfuron-methyl-sodium in air

The fate of iodosulfuron-methyl-sodium in air has been evaluated, full details are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(4):4453), no additional studies are considered for this assessment.

**Table 8.10‑1: Summary of atmospheric degradation and behaviour**

|  |  |
| --- | --- |
| Compound | Iodosulfuron-methyl-sodium |
| Direct photolysis in air | Not studied, no data required |
| Quantum yield of direct phototransformation | - |
| Photochemical oxidative degradation in air | DT50 (h): 152 derived by the Atkinson model  OH (24h) concentration assumed = 0.5 x 106 OH/cm3 |
| Volatilisation | Not available, not requested |
| Metabolites | Not available, not requested |

The vapour pressure at 20 °C of the active substance iodosulfuron-methyl-sodium is < 10-5 Pa. Hence the active substance iodosulfuron-methyl-sodium is regarded as non-volatile. Therefore exposure of adjacent surface waters and terrestrial ecosystems by the active substance iodosulfuron-methyl-sodium due to volatilization with subsequent deposition is not expected.

### Fate and behaviour of mesosulfuron-methyl in air

The fate of mesosulfuron-methyl in air has been evaluated, full details are provided in the respective EU reference and related documents and summarised in the EFSA conclusion (EFSA Journal 2016;14(10): 4584), no additional studies are considered for this assessment.

**Table 8.10‑2: Summary of atmospheric degradation and behaviour**

|  |  |
| --- | --- |
| Compound | Mesosulfuron-methyl |
| Direct photolysis in air | Not studied, no data required |
| Quantum yield of direct phototransformation | - |
| Photochemical oxidative degradation in air | DT50 (d): 0.05 derived by the Atkinson model  OH (12h) concentration assumed = 1.5 x 106 OH/cm3 |
| Volatilisation | Not available, not requested |
| Metabolites | AE F099095: DT50 (d): 0.053 derived by the Atkinson model; OH (12h) concentration assumed = 1.5 x 106  OH/cm3  AE F092944: DT50 (d): 0.053 derived by the Atkinson model; OH (12h) concentration assumed = 1.5 x 106  OH/cm3 |

The vapour pressure at 20 °C of the active substance mesosulfuron-methyl is < 10-5 Pa. Hence the active substance mesosulfuron-methyl is regarded as non-volatile. Therefore exposure of adjacent surface waters and terrestrial ecosystems by the active substance mesosulfuron-methyl due to volatilization with subsequent deposition is not expected.

### Fate and behaviour of mefenpyr-diethyl in air

Table 8.10‑3: Summary of atmospheric degradation and behaviour: mefenpyr-diethyl   
(safener)

|  |  |
| --- | --- |
| Compound | mefenpyr-diethyl (safener) |
| Direct photolysis in air | Not studied, no data required |
| Quantum yield of direct phototransformation | Not studied, no data required |
| Photochemical oxidative degradation in air | DT50 (d): 1.96 derived by the Atkinson model  OH (12h) concentration assumed = 1.5 x106 radicals/cm3 |
| Volatilisation | Vapour pressure (Pa): 6.3 x 10-6 Pa at 20 °C  Henry's Law Constant (Pa.m3/mol): - |
| Metabolites | - |

The vapour pressure of the safener mefenpyr-diethyl at 20°C is 6.3 x 10-6 Pa. Hence the safener mefenpyr-diethyl is regarded as non-volatile. Therefore exposure of adjacent surface waters and terrestrial ecosystems from volatilization followed by subsequent deposition is not expected to occur.

1. Lists of data considered in support of the evaluation

Tables considered not relevant can be deleted as appropriate.

MS to blacken authors of vertebrate studies in the version made available to third parties/public.

List of data submitted by the applicant and relied on

| **Data Point** | **Author(s)** | **Year** | | **Title**  **Company Report No.**  **Source**  **GLP or GEP status published or not** |
| --- | --- | --- | --- | --- |
| KCP 9.1.3 / 01 | Heine, S. | 2016 | | Iodosulfuron-methyl-sodium (IMS) and metabolites: PECsoil EUR - Use in arable crop  Report No.: EnSa-16-0690, Edition Number: [M-569137-01-1](dart://dart/edition?ed_no=M-569137-01-1)  Bayer CropScience AG, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.1.3 / 02 | Bolekhan, A.; Herrmann, M. | 2017 | | Mesosulfuron-methyl (MSM) and metabolites: PECsoil EUR - Use in arable crops in E  Report No.: EnSa-17-0143, Edition Number: [M-591676-01-1](dart://dart/edition?ed_no=M-591676-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 01 | Heine, S.; Fortin-  McCuaig, M. | 2017 | | Iodosulfuron-methyl-sodium (IMS) and metabolites: PECgw FOCUS PEARL, PELMO winter cereals (spring use) in Europe  Report No.: EnSa-17-0501, Edition Number: [M-602657-01-1](dart://dart/edition?ed_no=M-602657-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 02 | Heine, S.; Lange, N. | 2017 | | Iodosulfuron-methyl-sodium (IMS) and metabolites: PECgw FOCUS PEARL, PELMO EUR (Tier 1) - Use in cereals in Europe  Report No.: EnSa-16-0388, Edition Number: [M-602957-01-1](dart://dart/edition?ed_no=M-602957-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 03 | Heine, S.; Fortin-  McCuaig, M. | 2017 | | Iodosulfuron-methyl-sodium (IMS) and metabolites: PECgw FOCUS PEARL, PELMO  - Use in winter cereals (autumn use) in Europe  Report No.: EnSa-17-0498, Edition Number: [M-602654-02-1](dart://dart/edition?ed_no=M-602654-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 04 | Heine, S.; Fortin-  McCuaig, M. | 2017 | | Iodosulfuron-methyl-sodium (IMS) and metabolites: PECgw FOCUS PEARL, PELMO  - Use in spring cereals (spring use) in Europe  Report No.: EnSa-17-0503, Edition Number: [M-617499-01-1](dart://dart/edition?ed_no=M-617499-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 05 | Heine, S.; Fortin-  McCuaig, M. | 2017 | | Iodosulfuron-methyl-sodium (IMS) and metabolite: PECgw FOCUS PEARL, PELMO  Use in winter cereals (autumn use) in Europe  Report No.: EnSa-17-0522, Edition Number: [M-602658-01-1](dart://dart/edition?ed_no=M-602658-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 06 | Heine, S.; Hoerold, C. | 2017 | | Iodosulfuron-methyl-sodium (IMS) and metabolite: PECgw FOCUS PEARL, PELMO  EUR (higher tier) - Use in cereals in Europe  Report No.: EnSa-16-0414 v1, Edition Number: [M-602959-01-1](dart://dart/edition?ed_no=M-602959-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 07 | Bolekhan, A.; Boiselle, N. | 2017 | | Mesosulfuron-methyl (MSM) and metabolites: Core PECgw EUR - Modelling core in groundwater risk assessment in Europe  Report No.: EnSa-16-0895, Edition Number: [M-591551-02-1](dart://dart/edition?ed_no=M-591551-02-1)  Bayer AG, Crop Science Division, Monheim, Germany |
| **... amended: 2017-08-06** |
| GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 08 | Bolekhan, A.; Boiselle, N. | 2017 | | Mesosulfuron-methyl (MSM): PECgw FOCUS PEARL, PELMO, MACRO EUR (spri winter cereals in Europe  Report No.: EnSa-17-0435, Edition Number: [M-601650-02-1](dart://dart/edition?ed_no=M-601650-02-1)  Bayer AG, Crop Science Division, Monheim, Germany |
| **... amended: 2017-10-18** |
| GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 09 | Bolekhan, A.; Boiselle, N. | 2017 | | Mesosulfuron-methyl (MSM) and metabolites: PECgw FOCUS PEARL EUR (spring u winter cereals in Europe  Report No.: EnSa-17-0538, Edition Number: [M-601927-01-1](dart://dart/edition?ed_no=M-601927-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 10 | Bolekhan, A.; Boiselle, N. | 2017 | | Mesosulfuron-methyl (MSM) and metabolites: PECgw FOCUS PELMO, MACRO EU  Use in winter cereals in Europe  Report No.: EnSa-17-0436, Edition Number: [M-601653-01-1](dart://dart/edition?ed_no=M-601653-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.4.1 / 11 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM) and metabolites: PECgw FOCUS PELMO, MACRO EU  Use in winter cereals in Europe  Report No.: EnSa-17-0437, Edition Number: [M-601663-01-1](dart://dart/edition?ed_no=M-601663-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 12 | Bolekhan, A.; Herrmann, M. | 2017 | Mesosulfuron-methyl (MSM) and metabolite: PECgw FOCUS PEARL, PELMO, MAC  (lysimeter) - Use in winter and spring cereals in Europe  Report No.: EnSa-17-0145, Edition Number: [M-592572-01-1](dart://dart/edition?ed_no=M-592572-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 13 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM): PECgw FOCUS PEARL, PELMO, MACRO EUR (autu in winter cereals in Europe  Report No.: EnSa-17-0432, Edition Number: [M-601637-01-1](dart://dart/edition?ed_no=M-601637-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 14 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM) and metabolites: PECgw FOCUS PELMO, MACRO EU  - Use in winter cereals in Europe  Report No.: EnSa-17-0433, Edition Number: [M-601638-01-1](dart://dart/edition?ed_no=M-601638-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 15 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM) and metabolites: PECgw FOCUS PELMO, MACRO EU  - Use in winter cereals in Europe  Report No.: EnSa-17-0434, Edition Number: [M-603055-01-1](dart://dart/edition?ed_no=M-603055-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 16 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM): PECgw FOCUS PEARL, PELMO, MACRO EUR - cereals in Europe  Report No.: EnSa-17-0444, Edition Number: [M-604955-01-1](dart://dart/edition?ed_no=M-604955-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 17 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM) and metabolites: PECgw FOCUS PEARL EUR - Use in in Europe  Report No.: EnSa-17-0530, Edition Number: [M-603626-01-1](dart://dart/edition?ed_no=M-603626-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 18 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM) and metabolites: PECgw FOCUS PELMO, MACRO EU spring cereals in Europe  Report No.: EnSa-17-0445, Edition Number: [M-603623-01-1](dart://dart/edition?ed_no=M-603623-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No unpublished | |
| KCP 9.2.4.1 / 19 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM) and metabolites: PECgw FOCUS PELMO, MACRO EU spring cereals in Europe  Report No.: EnSa-17-0446, Edition Number: [M-603633-01-1](dart://dart/edition?ed_no=M-603633-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 20 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM): PECgw FOCUS PEARL, PELMO EUR (tier 2) - Use in and spring cereals in Europe  Report No.: EnSa-17-0447, Edition Number: [M-601674-01-1](dart://dart/edition?ed_no=M-601674-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.4.1 / 21 | Bolekhan, A.; Boiselle, N. | 2017 | Mesosulfuron-methyl (MSM): PECgw FOCUS PEARL, PELMO, MACRO EUR (autu use) - Use in winter cereals in Europe  Report No.: EnSa-17-0515, Edition Number: [M-618046-01-1](dart://dart/edition?ed_no=M-618046-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.5 / 01 | Heine, S. | 2016 | Iodosulfuron-methyl-sodium (IMS) and metabolites: PECsw,sed FOCUS EUR - Use in Europe  Report No.: EnSa-16-0741, Edition Number: [M-564523-01-1](dart://dart/edition?ed_no=M-564523-01-1)  Bayer CropScience AG, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.5 / 02 | Heine, S.; Lange, N. | 2017 | Iodosulfuron-methyl-sodium (IMS) and metabolite: PECsw,sed FOCUS EUR - Use in (spring use) in Europe  Report No.: EnSa-17-0475, Edition Number: [M-602706-01-1](dart://dart/edition?ed_no=M-602706-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.5 / 03 | Heine, S.; Lange, N. | 2018 | Iodosulfuron-methyl-sodium (IMS) and metabolite: PECsw,sed FOCUS EUR (Tier 2) cereals (spring use and autumn use) in Europe  Report No.: EnSa-18-0880, Edition Number: [M-647295-01-1](dart://dart/edition?ed_no=M-647295-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.5 / 04 | Heine, S.; Lange, N. | 2017 | Iodosulfuron-methyl-sodium (IMS) and metabolite: PECsw,sed FOCUS EUR - Use in (autumn use) in Europe  Report No.: EnSa-17-0473, Edition Number: [M-617758-01-1](dart://dart/edition?ed_no=M-617758-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.5 / 05 | Heine, S.; Lange, N. | 2017 | Iodosulfuron-methyl-sodium (IMS) and metabolite: PECsw,sed FOCUS EUR - Use in in Europe  Report No.: EnSa-17-0477, Edition Number: [M-617759-01-1](dart://dart/edition?ed_no=M-617759-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.5 / 06 | Bolekhan, A. | 2017 | Multi-year PECsw calculations for sulfonylurea herbicides in Europe: Description of m  Report No.: EnSa-17-0541, Edition Number: [M-602115-01-1](dart://dart/edition?ed_no=M-602115-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.5 / 07 | Bolekhan, A.; Heine, S.;  Hammel, K. | 2018 | Iodosulfuron-methyl-sodium (IMS) and metabolite: PECsw,sed FOCUS EUR (multiwinter cereals in Europe  Report No.: EnSa-18-0112, Edition Number: [M-623523-01-1](dart://dart/edition?ed_no=M-623523-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished | |
| KCP 9.2.5 / 08 | Bolekhan, A.; Boiselle, N. | 2017 | | Mesosulfuron-methyl (MSM) and metabolites: Core PECsw EUR - Modelling core info surface water risk assessment in Europe  Report No.: EnSa-16-0897, Edition Number: [M-591552-02-1](dart://dart/edition?ed_no=M-591552-02-1)  Bayer AG, Crop Science Division, Monheim, Germany |
| **... amended: 2017-08-06** |
| GLP/GEP: No  unpublished |
| KCP 9.2.5 / 09 | Bolekhan, A.; Herrmann, M. | 2017 | | Mesosulfuron-methyl (MSM) and metabolites: PECsw,sed FOCUS EUR (generic repo Use in cereals in Europe  Report No.: EnSa-17-0144, Edition Number: [M-591562-01-1](dart://dart/edition?ed_no=M-591562-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.5 / 10 | Bolekhan, A.; Lange, N. | 2017 | | Mesosulfuron-methyl (MSM): PECsw,sed FOCUS EUR - Use in winter cereals (spring  Report No.: EnSa-17-0403, Edition Number: [M-602229-01-1](dart://dart/edition?ed_no=M-602229-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.5 / 11 | Bolekhan, A.; Lange, N. | 2017 | | Mesosulfuron-methylss (MSM): PECsw,sed FOCUS EUR - Use in winter cereals (autum rope  Report No.: EnSa-17-0402, Edition Number: [M-602215-01-1](dart://dart/edition?ed_no=M-602215-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.5 / 12 | Bolekhan, A.; Lange, N. | 2017 | | Mesosulfuron-methyl (MSM): PECsw,sed FOCUS EUR - Use in spring cereals in Euro  Report No.: EnSa-17-0406, Edition Number: [M-602663-01-1](dart://dart/edition?ed_no=M-602663-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |
| KCP 9.2.5 / 13 | Bolekhan, A.; Heine, S.;  Hammel, K. | 2018 | | Mesosulfuron-methyl (MSM): PECsw FOCUS EUR (multi-year) - Use in winter cerea  Report No.: EnSa-18-0111, Edition Number: [M-619505-01-1](dart://dart/edition?ed_no=M-619505-01-1)  Bayer AG, Crop Science Division, Monheim, Germany  GLP/GEP: No  unpublished |

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

**Iodosulfuron-methyl-sodium**

| **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** |
| --- | --- | --- | --- | --- | --- |
| KCA  7.1.1.1 /01  KCA  7.1.2.1.1  /01 | Gildemeister, H. | 1998a | Degradation in four agricultural soils at room temperature under aerobic conditions in the laboratory AE F115008triazinyl-2-14C  Hoechst Schering AgrEvo GmbH, Frankfurt am Main, Germany  Bayer CropScience,  Report No.: C000375,  Edition Number[: M-180556-01-1](dart://dart/edition?ed_no=M-180556-01-1)  EPA MRID No.: 45108933  Date: 1998-10-19  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.1.1 /02  KCA  7.1.2.1.1  /02 | Gildemeister, H. | 1998b | Degradation in two loam soils under standard conditions in the laboratory AE F115008-triazinyl-2-14C  Hoechst Schering AgrEvo GmbH, Frankfurt am Main, Germany  Bayer CropScience,  Report No.: C000947,  Edition Number: [M-181517-01-1](dart://dart/edition?ed_no=M-181517-01-1)  EPA MRID No.: 45108934  Date: 1998-11-04  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.1.1 /03  KCA  7.1.2.1.1  /03 | Gildemeister, H. | 1998c | Degradation in a loamy sand soil at room temperature under non-sterile and sterile aerobic conditions in the laboratory AE  F115008-phenyl-u-14C  Hoechst Schering AgrEvo GmbH, Frankfurt am Main, Germany  Bayer CropScience,  Report No.: C000376,  Edition Number: [M-180558-01-1](dart://dart/edition?ed_no=M-180558-01-1)  EPA MRID No.: 45108935  Date: 1998-10-19  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.1.1 /04  KCA  7.1.2.1.1  /04 | Gildemeister, H. | 1998d | Degradation in a silt loam soil at different temperature and soil moisture under aerobic conditions in the laboratory AE  F115008-triazinyl-2-14C  Hoechst Schering AgrEvo GmbH, Frankfurt am Main, Germany  Bayer CropScience,  Report No.: C000744,  Edition Number: [M-181175-01-1](dart://dart/edition?ed_no=M-181175-01-1)  EPA MRID No.: 45108936  Date: 1998-11-04  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.1.1  /05  KCA  7.1.2.1.1  /05 | Gildemeister, H. | 1998e | Degradation in two soils at room temperature and two moisture conditions under aerobic conditions in the laboratory AE F115008-triazinyl-2-14C  Hoechst Schering AgrEvo GmbH, Frankfurt am Main, Germany  Bayer CropScience,  Report No.: C001065,  Edition Number: [M-181732-01-1](dart://dart/edition?ed_no=M-181732-01-1)  EPA MRID No.: 45109001  Date: 1998-11-02  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.1.1  /06 | Stupp, H. P.; Weuthen, M. | 2013 | [Triazinyl-2-14C]iodosulfuron-methyl-sodium: Retrospective identification of metabolites from aerobic soil metabolism study no. CB94/049 (1998) Bayer CropScience,  Report No.: EnSa-13-0267,  Edition Number: [M-458024-01-1](dart://dart/edition?ed_no=M-458024-01-1)  Date: 2013-06-19  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.1.1  /07 | Telscher, M. | 2013 | Statement - Iodosulfuron-methyl: Re-evaluation of aerobic soil degradation studies following the identification of formerly unidentified soil metabolites in degradation studies of  Gildemeister 1998[: M-180556-01-1](dart://dart/edition?ed_no=M-180556-01-1)[, M-181175-01-1,](dart://dart/edition?ed_no=M-181175-01-1)  M181517-01-1 an[d M-181732-01-1](dart://dart/edition?ed_no=M-181732-01-1)  Bayer CropScience,  Report No.: EnSa-13-1050,  Edition Number: [M-471682-01-1](dart://dart/edition?ed_no=M-471682-01-1)  Date: 2013-12-05  GLP/GEP: n.a., unpublished | N | Bayer CropScience |
| KCA  7.1.1.1 /08  KCA  7.1.2.1.1  /11 | Hein, W. | 2000 | Degradation and metabolism of AE F115008 in one soil under standard conditions  SLFA Neustadt, Neustadt, Germany  Bayer CropScience,  Report No.: C009125,  Edition Number: [M-198118-01-1](dart://dart/edition?ed_no=M-198118-01-1)  Date: 2000-04-28  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.1.1  /09 | Telscher, M. | 2012 | Statement - Iodosulfuron-methyl: Additional information to the not identified regions of interest in study AGR08 ([Mdart://dart/edition?ed\_no=M-198118-01-1198118-01-1)](dart://dart/edition?ed_no=M-198118-01-1):  Degradation and metabolism of AE F115008 in one soil under standard conditions Bayer CropScience,  Report No.: EnSA-12-0512,  Edition Number: [M-438147-01-1](dart://dart/edition?ed_no=M-438147-01-1)  Date: 2012-09-12  GLP/GEP: n.a., unpublished | N | Bayer CropScience |
| KCA  7.1.1.2 /01  KCA  7.1.2.1.3  /01 | Gildemeister, H. | 1998 | Degradation in two soils under anaerobic conditions in the laboratory Code: AE F115008-triazinyl-2-14C  Hoechst Schering AgrEvo GmbH, Frankfurt am Main, Germany  Bayer CropScience,  Report No.: C001285,  Edition Number: [M-182261-01-1](dart://dart/edition?ed_no=M-182261-01-1)  EPA MRID No.: 45109002  Date: 1998-11-18  GLP/GEP: yes, unpublished | N | Bayer CropScience |
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| KCA 7.1.1.3  /02 | Stupp, H. P.; Junge, T. | 2014 | [triazinyl-2-14C]iodosulfuron-methyl-sodium phototransformation on soil Bayer CropScience,  Report No.: ENSA-13-0490,  Edition Number: [M-474581-01-1](dart://dart/edition?ed_no=M-474581-01-1)  Date: 2014-01-07  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.2.1.1 /12  KCA  7.1.2.1.2  /02 | Schmitt, W.; Partsch, S. | 2013 | Kinetic evaluation of laboratory aerobic soil degradation of iodosulfuron-methyl-sodium and its metabolites according to  FOCUS kinetics  Bayer CropScience,  Report No.: EnSa-13-0100,  Edition Number: [M-447102-02-1](dart://dart/edition?ed_no=M-447102-02-1)  Date: 2013-01-30  ...Amended: 2014-02-10  GLP/GEP: no, unpublished | N | Bayer CropScience |
| KCA  7.1.2.1.1 /13  KCA  7.1.2.1.2  /04 | Vrbka, L; Heruth, D | 2014 | Supplementary information for the kinetic evaluation of laboratory aerobic soil degradation of iodosulfuron-methylsodium and its metabolites Bayer CropScience,  Report No.: EnSa-14-0811  Edition Number: [M-491200-01-1](dart://dart/edition?ed_no=M-491200-01-1)  Date: 2014-07-10  GLP/GEP: no, unpublished | N | Bayer CropScience |
| KCA  7.1.2.1.1    KCA  7.1.2.1.2 | Heine, S | 2015 | Supplementary information for the kinetic evaluation of laboratory aerobic soil degradation of iodosulfuron-methylsodium and its metabolites  Bayer CropScience  Report No.: EnSa-15-0856  Edition Number: [M-536616-01-1](dart://dart/edition?ed_no=M-536616-01-1)  Date: 2015-10-13  GLP/GEP: no, unpublished | N | Bayer CropScience |
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| KCA  7.1.2.1.2  /01 | Moendel, M. | 2001 | Degradation and metabolism of AE F059411 in one soil under standard conditions  SLFA Neustadt, Neustadt, Germany  Report No.: C012400,  Edition Number: [M-202633-01-1](dart://dart/edition?ed_no=M-202633-01-1)  EPA MRID No.: 49275311  Date: 2001-06-12  GLP/GEP: yes, unpublished | N | Bayer CropScience |
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| KCA  7.1.2.2 /01  KCP  9.1.1.2 | Balluff, M. | 1998 | The degradation of AE F115008 in soil following a single application of AE F115008 02 WG20 B002 at 6 locations in  Europe (Northern and Southern Zone), 1997  Arbeitsgemeinschaft GAB GmbH & IFU GmbH, Germany  Bayer CropScience,  Report No.: C001478,  Edition Number: [M-182730-01-1](dart://dart/edition?ed_no=M-182730-01-1)  EPA MRID No.: 45109010  Date: 1998-11-20  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.2.2  /02  KCP  9.1.1.2 | Wrede, A. | 1998 | Stability of AE F115008 and its metabolite AE F075736 in soil during deep freeze storage of 24 months (interim report)  Code: AE F115008  Hoechst Schering AgrEvo GmbH, Frankfurt am Main, Germany  Bayer CropScience,  Report No.: C000984,  Edition Number: [M-181584-01-1](dart://dart/edition?ed_no=M-181584-01-1)  EPA MRID No.: 45109012  Date: 1998-09-30  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.2.2.1  /01  KCP  9.1.1.2 | Schmitt, W.; Schnitzler, F. | 2013 | Kinetic evaluation of field dissipation studies with iodosulfuron-methyl-sodium and its metabolite AE F075736 under european conditions  Bayer CropScience,  Report No.: ENSA-13-0116,  Edition Number: [M-447334-01-1](dart://dart/edition?ed_no=M-447334-01-1)  Date: 2013-02-15  GLP/GEP: no, unpublished | N | Bayer CropScience |
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| KCA  7.1.2.2.1    KCP  9.1.1.2 | Agert, J. | 2015 | Environmental Conditions at seven North American Terrestrial Field Dissipation Study Sites - Representativeness for  Europe  Bayer CropScience,  Report No.: EnSa-15-0866,  Edition Number: [M-537050-01-1](dart://dart/edition?ed_no=M-537050-01-1)  Date: 2015-10-26  GLP/GEP: no, unpublished | N | Bayer CropScience |
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| KCA  7.1.3.1.1  /03 | Hein, W. | 2000 | Adsorption/desorption of AE F115008-(phenyl-U-14C) on one soil  SLFA Neustadt, Neustadt, Germany  Bayer CropScience,  Report No.: C010115,  Edition Number: [M-198449-01-1](dart://dart/edition?ed_no=M-198449-01-1)  Date: 2000-09-20  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.3.1.2  /02 | Schmidt, E. | 1998 | Determination of the adsorption/desorption behaviour in the system soil/water in three soil types according to OECD  Guideline #106 Code: (14C)-AE F075736  Hoechst Schering AgrEvo GmbH, Frankfurt am Main, Germany  Bayer CropScience,  Report No.: C001558,  Edition Number: [M-182943-01-1](dart://dart/edition?ed_no=M-182943-01-1)  EPA MRID No.: 45109016  Date: 1998-11-16  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.3.1.2  /03 | Hein, W. | 1998 | Adsorption/desorption of AE F075736 on two different soils  SLFA, FB Landwirtschaft, Weinbau und Gartenbau,  Neustadt, Germany  Report No.: C001554,  Edition Number: [M-182934-02-1](dart://dart/edition?ed_no=M-182934-02-1)  Date: 1998-11-25 ...Amended: 2001-11-28  GLP/GEP: yes, unpublished | N | Bayer CropScience |
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| KCA  7.1.3.1.2  /05 | Hein, W. | 1998 | Adsorption/desorption of AE F059411-(2-14C) on one soil  SLFA, FB Landwirtschaft, Weinbau und Gartenbau,  Neustadt, Germany  Report No.: C001555,  Edition Number: [M-182936-02-1](dart://dart/edition?ed_no=M-182936-02-1)  Date: 1998-11-20 ...Amended: 2001-11-28  GLP/GEP: yes, unpublished | N | Bayer CropScience |
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| KCA  7.1.3.1.2  /08 | Telscher, M. | 2013 | Statement - Koc evaluation of the soil photolysis metabolite of iodosulfuron-methyl AE 0002166 (BCS-AW35544)  Bayer CropScience,  Report No.: EnSa-13-1046,  Edition Number: [M-471677-01-1](dart://dart/edition?ed_no=M-471677-01-1)  Date: 2013-12-02  GLP/GEP: n.a., unpublished | N | Bayer CropScience |
| KCA  7.1.3.1.2  /09 | Telscher, M. | 2013 | Statement - Koc evaluation of aerobic soil metabolite of iodosulfuron-methyl, AE F145741 (BCS-AU71532)  Bayer CropScience,  Report No.: EnSa-13-1048,  Edition Number: [M-471680-01-1](dart://dart/edition?ed_no=M-471680-01-1)  Date: 2013-12-02  GLP/GEP: n.a., unpublished | N | Bayer CropScience |
| KCA  7.1.3.1.2  /10 | Persch, A. | 2013 | Determination of the adsorption/desorption behaviour of  BCS CW81253 in four soils  Eurofins-GAB GmbH, Niefern-Oeschelbronn, Germany  Bayer CropScience,  Report No.: S13-00814,  Edition Number: [M-460112-01-1](dart://dart/edition?ed_no=M-460112-01-1)  Date: 2013-06-14  GLP/GEP: yes, unpublished | N | Bayer CropScience |
| KCA  7.1.3.1.2  /11 | Hein, W. | 2010 | [Triazine-2-14C] BCS-AB56501: Adsorption/desorption in five different soils  Rheinland-Pfalz AgroScience GmbH, Neustadt, Germany  Bayer CropScience,  Report No.: AS140,  Edition Number: [M-366666-01-1](dart://dart/edition?ed_no=M-366666-01-1)  Date: 2010-01-07  GLP/GEP: yes, unpublished | N | Bayer CropScience |
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**Mesosulfuron-methyl**

| **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** |
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| KCA  7.1.3.1.2  /11 | Ziemer, F.; Peschke, C. | 2012 | AE F147447: Dissociation constant in water  Bayer CropScience,  Report No.: PA12/079,  Edition Number: [M-441376-01-1](dart://dart/edition?ed_no=M-441376-01-1)  Date: 2012-10-31  GLP/GEP: yes, unpublished | N | Bayer CropScience |
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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 new Annex II studies

No new Annex II studies were required in context of the present submission. The fate and behaviour of the active substances has been evaluated on EU level according to the Commission Regulation (EU) No. 1107/2009, full details are provided in the EU renewal assessment reports and related documents.

1. Additional information provided by the applicant (e.g. detailed modelling data)

No additional data submitted.

1. cf. List of EU endpoints: "Standard calculation for parent and all metabolites" [↑](#footnote-ref-1)
2. cf. List of EU endpoints: "Higher tier calculation for parent and metsulfuron-methyl AE F075736 (using normalised field DT50 and PUF 0.5 for metsulfuron-methyl AE F075736 derived from following crop metabolism studies)." [↑](#footnote-ref-2)
3. see headline 'Modelling Endpoints' in Section 8.3.1 of present dRR for explanatory information to the tiered approach in handling biphasic kinetics in "modelling the parent active substance alone" [↑](#footnote-ref-3)
4. “Guidance document on tiered risk assessment for plant protection products for aquatic organisms in edge-of-field surface waters in the context of Regulation (EC) No 1107/2009”, as provided by the Commission Services (SANTE2015-00080, 15 January 2015). (Cited as “EFSA Aquatic Guidance Document” or “AGD” in the following pages.) [↑](#footnote-ref-4)
5. FOCUS (2007). “Landscape And Mitigation Factors In Aquatic Risk Assessment. Volume 2. Detailed Technical Reviews”. Report of the FOCUS Working Group on Landscape and Mitigation Factors in Ecological Risk Assessment, EC Document Reference SANCO/10422/2005 v2.0. 436 pp. [↑](#footnote-ref-5)
6. cf. List of EU endpoints: "Standard calculation for parent and all metabolites" [↑](#footnote-ref-6)
7. cf. List of EU endpoints: "Higher tier calculation for parent and metsulfuron-methyl AE F075736 (using normalised field DT50 and PUF 0.5 for metsulfuron-methyl AE F075736 derived from following crop metabolism studies)." [↑](#footnote-ref-7)