REGISTRATION REPORT

Part B

Section 8

Environmental Fate

Detailed summary of the risk assessment

Product code: CHR/H/MEZO 30OD

Product name(s):, Vidal 30 OD, Pacyfik 30 OD

Chemical active substance:

Mesosulfuron-methyl, 30 g/L

Central Zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT

(authorization)

Applicant: Innvigo Sp. z o.o

Submission date: December 2023

RMS Assessment: 26/07/2024

MS Finalisation date: 19/11/2024

Version history

When	What
July 2024	zRMs assessment
November 2024	Following commenting period

Table of Contents

8 Fate and behaviour in the environment (KCP 9) 4

8.1 Critical GAP and overall conclusions 5
8.2 Metabolites considered in the assessment 10
8.3 Rate of degradation in soil (KCP 9.1.1) 12
8.3.1 Aerobic degradation in soil (KCP 9.1.1.1) 12
8.3.1.1 Mesosulfuron-methyl and its metabolites 13
8.3.2 Anaerobic degradation in soil (KCP 9.1.1.2) 23
8.4 Field studies (KCP 9.1.3) 24
8.4.1 Soil dissipation testing on a range of representative soils (KCP 9.1.3.1) 24
8.4.2 Soil accumulation testing (KCP 9.1.3.2) 24
8.5 Mobility in soil (KCP 9.1.4) 25
8.5.1 Mesosulfuron-methyl and its metabolites 25
8.5.2 Column leaching (KCP 9.1.4.1) 29
8.5.3 Lysimeter studies (KCP 9.1.4.2) 29
8.5.4 Field leaching studies (KCP 9.1.4.3) 29
8.6 Degradation in the water/sediment systems (KCP 9.2, KCP 9.2.1, KCP 9.2.2, KCP 9.2.3) 30
8.6.1 Mesosulfuron-methyl and its metabolites 30
8.7 Predicted Environmental Concentrations in soil (PEC_{soil}) (KCP 9.3) 34
8.7.1 Justification for new endpoints 34
8.7.2 Active substance(s) and relevant metabolite(s) 34
8.7.3 PEC_{soil} of CHR/H/MEZO 30 OD 46
8.8 Predicted Environmental Concentrations in groundwater (PEC_{gw}) (KCP 9.4) 50
8.8.1 Justification for new endpoints 50
8.8.2 Active substance(s) and relevant metabolite(s) (KCP 9.4.1) 50
8.8.2.1 Mesosulfuron-methyl and its metabolites 50
8.9 Predicted Environmental Concentrations in surface water (PEC_{sw}) (KCP 9.5) 63
8.9.1 Justification for new endpoints 63
8.9.2.3 $PEC_{sw/sed}$ of CHR/H/MEZO 30 OD on Winter cereals 76
8.10 Fate and behaviour in air (KCP 9.6) 79

Appendix 1 Lists of data considered in support of the evaluation 81

Appendix 2 Detailed evaluation of the new Annex II studies 88

8 Fate and behaviour in the environment (KCP 9)

General comment
This document presents the environmental fate summary and exposure calculations for the plant protection product CHR/H/MEZO 30 OD (Vidal 30 OD, Pacyfik 30 OD), an oil dispersion type formulation (OD) containing 30 g/L mesosulfuron-methyl for use as a herbicide in cereals. The formulation also contains the safener, mefenpyr-diethyl (90 g/l) but the Applicant has not provided information on this substance and the risk assessment of this safener was not evaluated by the zRMS. All comments of the evaluator there are in the “greyboxes”.

8.1 Critical GAP and overall conclusions

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

PPP (product name/code):	CHR/H/MEZO 30 OD	Formulation type:	Oil dispersion OD[a, b]
Active substance 1:	Mesosulfuron-methyl	Conc. of as 1:	30 g/l [c]
Active substance 2:	n/a	Conc. of as 2:	n/a
Active substance 3:	n/a	Conc. of as 3:	n/a
Safener:	Mefenpyr-diethyl	Conc. of safener:	90 g/L
Synergist:		Conc. of synergist:	
Applicant:	Innvigo Sp. z o.o.	Professional use:	☒
Zone(s):	central	Non professional use:	☐

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	PL	Winter wheat *Triticum aestivum* (TRZAW)	F	*Apera spica-venti* *Alopecurus myosuroides* *Poa annua* *Bromus hordeaceus* *Lolium perennium* *Viola arvensis* *Brassica napus* *Anthemis arvensis*	Spray, medium sprayer	BBCH 21-32	a) 1 b) 1	n/a	a) 0,5 l/ha b) 0,5 l/ha	a) 0,015 kg a.s./ha b) 0,015 kg a.s./ha	100-400			A

				Papaver rhoeas *Sinapsis arvensis* *Capsella brusa-pas-toris* *Stellaria media* *Veronica herderifolia*										
Interzonal uses (use as seed treatment, in greenhouses (or other closed places of plant production), as post-harvest treatment or for treatment of empty storage rooms)														
Minor uses according to Article 51 (zonal uses)														
2	PL	Spelt *Triticum spelta* (3SPWC) Emmer wheat *Triticum dicoc-cum* (TRZDI) Einkorn wheat *Triticum mono-coccum* (TRZMO) Durum wheat *Triticum durum* (TRZDW) Spring Rye *Secale cereale* (SECCS)	F	*Apera spica-venti* *Alopecurus myosu-roides* *Poa annua* *Bromus hordeaceus* *Lolium perennium* *Viola arvensis* *Brassica napus* *Anthemis arvensis* *Papaver rhoeas* *Sinapsis arvensis* *Capsella brusa-pas-toris* *Stellaria media* *Veronica herderifolia*	Spray, medium sprayer	BBCH 21-32	a) 1 b) 1	n/a	a) 0,5 l/ha b) 0,5 l/ha	a) 0,015 kg a.s./ha b) 0,015 kg a.s./ha	100-400			A
Minor uses according to Article 51 (interzonal uses)														

Remarks table heading:
(a) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(b) Catalogue of pesticide formulation types and international coding system CropLife International Technical Monograph n°2, 6th Edition Revised May 2008
(c) g/kg or g/l
(d) Select relevant
(e) Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1
(f) No authorization possible for uses where the line is highlighted in grey, Use should be crossed out when the notifier no longer supports this use.

Remarks columns:

1 Numeration necessary to allow references
2 Use official codes/nomenclatures of EU Member States
3 For crops, the EU and Codex classifications (both) should be used; when relevant, the use situation should be described (e.g. fumigation of a structure)
4 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
5 Scientific names and EPPO-Codes of target pests/diseases/ weeds or, when relevant, the common names of the pest groups (e.g. biting and sucking insects, soil born insects, foliar fungi, weeds) and the developmental stages of the pests and pest groups at the moment of application must be named.
6 Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench
Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated.
7 Growth stage at first and last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
8 The maximum number of application possible under practical conditions of use must be provided.
9 Minimum interval (in days) between applications of the same product
10 For specific uses other specifications might be possible, e.g.: g/m^3 in case of fumigation of empty rooms. See also EPPO-Guideline PP 1/239 Dose expression for plant protection products.
11 The dimension (g, kg) must be clearly specified. (Maximum) dose of a.s. per treatment (usually g, kg or L product / ha).
12 If water volume range depends on application equipments (e.g. ULVA or LVA) it should be mentioned under “application: method/kind”.
13 PHI - minimum pre-harvest interval
14 Remarks may include: Extent of use/economic importance/restrictions

* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1
** F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

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

Table 8.1-2: Assessed (critical) uses during approval of Mesosulfuron-methyl concerning the Section Environmental Fate (Mesosulfuron-methyl, EFSA Journal 2016;14(10):4584)

Crop and/or situation (a)	Member State or Country	Product name	F G or I (b)	Pests or Group of pests controlled (c)	Preparation		Application				Application rate per treatment			PHI (days) (m)	Remarks
					Type (d-f)	Conc. a.s. (i)	method kind (f-h)	range growth stages & season (j)	number min-max (k)	interval between application (min)	kg a.s /hL min-max (l)	Water L/ha min-max	kg a.s./ha min-max (l)		
Winter wheat	EU	(1) IMS + (2) MSM + (3) MPR OD 42	F	Grass and Dicot weed species	OD	(2) 0.010	Broadcast	BBCH 20-32 end of winter, beginning of vegetation	1	-	(2) 0.00375 - 0.015	100 - 400	(2) 0.015	n.a.	1.5 L product/ha
Winter rye	EU	(1) IMS + (2) MSM + (3) MPR OD 42	F	Grass and Dicot weed species	OD	(2) 0.010	Broadcast	BBCH 20-32 end of winter, beginning of vegetation	1	-	(2) 0.0015 - 0.006	100 - 400	(2) 0.006	n.a.	0.60 L product/ha RMS: The intended dose is quite low and is different to the one registered at French level for the representative product

(1) iodosulfuron-methyl-sodium, (2) mesosulfuron-methyl, (3) mefenpyr-diethyl; OD = oil dispersion

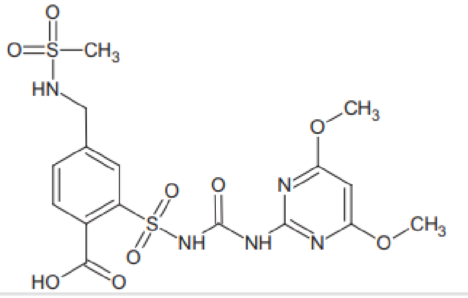
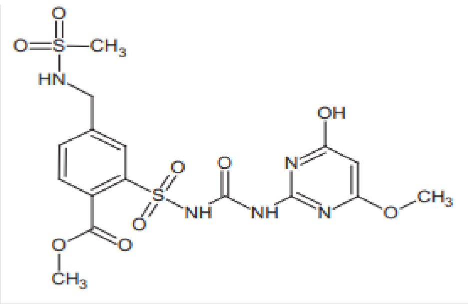
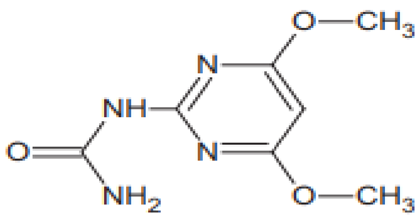
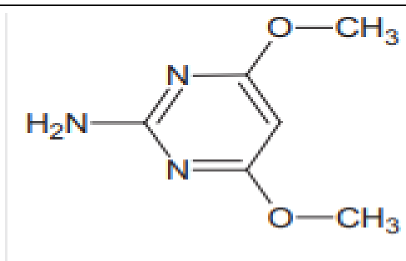
(a): For crops, the EU and Codex classifications (both) should be taken into account; where relevant, the use situation should be described (e.g. fumigation of a structure)
(b): Outdoor or field use (F), greenhouse application (G) or indoor application (I)
(c): e.g. biting and suckling insects, soil born insects, foliar fungi, weeds
(d): e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(e): CropLife International Technical Monograph no 2, 6th Edition. Revised May 2008. Catalogue of pesticide
(f): All abbreviations used must be explained
(g): Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench
(h) Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plant- type of
(i): g/kg or g/L. Normally the rate should be given for the active substance (according to ISO) and not for the variant in order to compare the rate for same active substances used in different variants (e.g. fluoroxypyr). **In certain cases, where only one variant is synthesised, it is more appropriate to give the rate for the variant (e.g. benthiavalicarb-isopropyl).**
(j): Growth stage at last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
(k): Indicate the minimum and maximum number of application possible under practical conditions of use

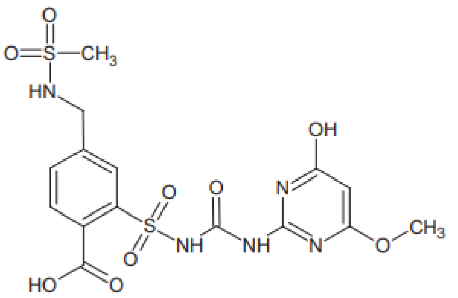
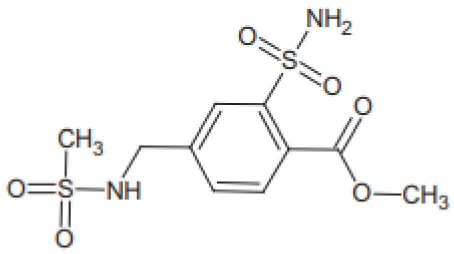
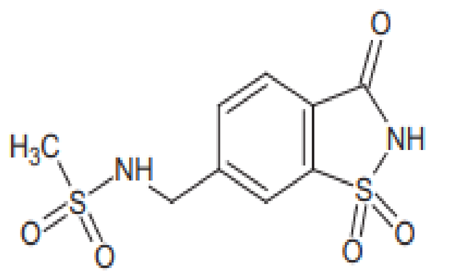
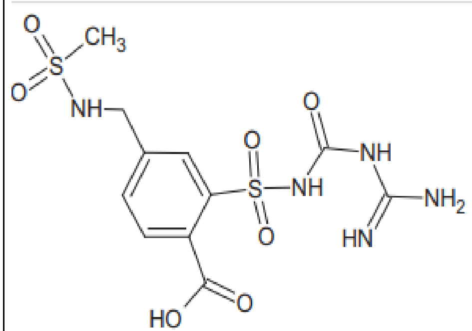
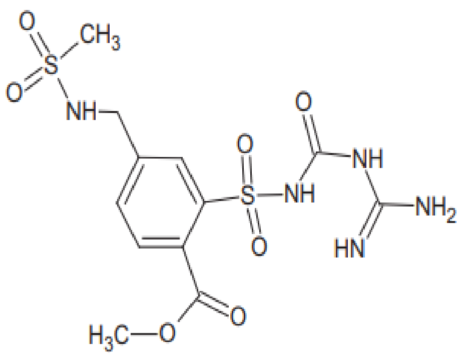
* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1

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

8.2 Metabolites considered in the assessment

Table 8.2-1: Metabolites of Mesosulfuron- methyl potentially relevant for exposure assessment

Metabolite	Molar mass [g/mol]	Chemical structure	Maximum observed occurence in compartements	Exposue assessment required due to
Mesosulfuron	489.5		Soil:16.2% Total Water and Sediment:4.9%	PEC_{gw}, PEC_{soil} $PEC_{sw/sed}$:
AE F160459	489.5		Soil: 8.9% Total Water/Sediment: 21.6%	PECgw, PECsoil PECsw/sed:
AE F099095	198.18		Soil: 29.2% Total Water and Sediment:0.9%	PECgw, PECsoil PECsw/sed:
AE F092944	155.2		Soil: 10.1% Total Water and Sediment:3.2%	PECgw, PECsoil PECsw/sed:

Metabolite	Molar mass [g/mol]	Chemical structure	Maximum observed occurence in compartements	Exposue assessment required due to
AE F160460	475.5		Soil: 8.6% Total Water and Sediment:8.4%	PECgw, PECsoil PECsw/sed:
AE F140584	322.4		Soil:7.1 % Total Water and Sediment:1.9 %	PECgw, PECsoil PECsw/sed:
AE F147447	290.3		Soil:~~0.001%~~ Aerobic soil: 5.8%* Anaerobic soil: 6.5% Total Water and Sedment:10.9%	PECgw, PECsoil PECsw/sed:
BCS-CV14885	393.4		~~Soil:5%~~ Total Water and Sediment:22% Observed in lysimeter studies at averaged yearly concentration in leachate > 0.1µg/L	PECgw, ~~PECsoil~~ PECsw/sed:
BCS-CO60720	407.4		~~Soil:0.001%~~ Total Water and Sediment:13.1%	~~PECgw,~~ ~~PECsoil~~ PECsw/sed:

** Higher levels formed under anaerobic conditions (max. 6.5%) but such prolonged conditions unlikely to occur in practice in case* *of the intended uses for this formulated product*

zRMS comments:
Information regarding metabolites of mesosulfuron-methyl provided in Tables 8.2-1 above is in general in line with EU agreed endpoints reported in EFSA Journal 2016;14(10):4584 for mesosulfuron-methyl. Respective corrections were included by the zRMS where necessary.

8.3 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.

8.3.1 Aerobic degradation in soil (KCP 9.1.1.1)

Available data

According to RAR Mesosulfuron-methyl 2016 data with the following studies: Tarara G (2000b), C009873; Tarara G (2000c), C009874; Tarara G (2000d), C009870; are not claimed a protection. They can be used in this documentation.

The following study: Persch A, (2013), S11-0392 was presented in core assessment and latest supplements of registration report Part B, Section 8: Environmental- fate of Atlantis 12 OD revised in 03/2020.We are obliged to relied upon following studies taking account that according to Regulation (EC) No 1107/2009 Article 59 Data protection: The period of data protection is 30 months if study was necessary for the renewal or review of an authorisation. Product Atlantis 12 OD was renewed in 24.08.2020 under MRiRW decision R – 555/2020d and data presented was necessary for authorisation renewal. According to Official Journal of the European Union C 229/2 Period of protection is 30 months from date of first renewal of authorisation of product containing that active substance in each Member State where the data is necessary for the renewal of authorisation, therefore no new study was provided.

Studies on aerobic degradation in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. EU approved endpoints were evaluated during Annex I inclusion. All relevant data are presented in: Mesosulfuron-methyl EFSA Journal 2016;14(10):4584.

8.3.1.1 Mesosulfuron-methyl and its metabolites

Table 8.3-1: Summary of aerobic degradation rates for Mesosulfuron- methyl- laboratory studies: Triggering endpoints

Mesosulfuron-methyl	Dark aerobic conditions					
Soil type (origin)	**pH a)**	**t. oC / % MWHC**	**DT_{50} / DT_{90} (d)**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	58.2 / >1000 Alpha:0.497 Beta: 19.16	-	2.4	FOMC
Sandy loam (SLI)	7.5	20 / 45.2	16.67 / 55.39	-	6.2	SFO
Loamy Sand (SLV)	6.25	20 / 30.8	59.9 / 628.5 Alpha:0.886 Beta: 50.43	-	3.2	FOMC
Loam (CLF)	7.3	20 / 47.5	16.0 / 53.0	-	2.0	SFO
Loam (FF)	7.3	20 / 43.2	32.9 / 155.0 Alpha: 2.54 Beta: 104.7	-	2.1	FOMC
Clay (SCL)	7.3	20 / 59.8	140.10/465.40	-	14.84	SFO
Silt loam (SLS)	7.1	20 / 54.9	7.6 / 25.3	-	18.5	SFO
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	32.14/595.42 Alpha: 0.634 Beta: 16.2	-	2.93	FOMC
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	27.9/130.9 Alpha: 2.56 Beta: 89.6	-	3.8	FOMC

a) measured in calcium chloride solution

Table 8.3-2: Summary of aerobic degradation rates for AE F160459 - laboratory studies: Triggering endpoints

AE F160459	Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl						
Soil type (origin)	**pH a)**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**DT_{50} (d) 20 °C pF2/10k Pa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)b)	5.2	20 / 31.0	-f)	-f)	-	-f)	-f)
Sandy loam (SLI)	7.5	20 / 45.2	128.64/427.34	0.124	-	10.2	SFO-SFO
Loamy Sand (SLV)	6.25	20 / 30.8	-f)	-f)	-	-f)	-f)
Loam (CLF)	7.3	20 / 47.5	38.60/128.23	0.119	-	14.3	SFO-SFO
Loam (FF)	7.3	20 / 43.2	76.0/252.47	0.092	-	9.9	SFO-SFO
Clay (SCL)	7.3	20 / 59.8	129.80/431.0	0.1424	-	21.68	SFO-SFO
Silt loam (SLS)	7.1	20 / 54.9	-g)	-g)	-	-g)	-g)
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	-g)	-g)	-	-g)	-g)
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	84.29/280.02	0.036	-	11.9	SFO-SFO

a) measured in calcium chloride solution
f) not observed in this soil in amounts that would allow kinetic evaluation
g) no reliable value could be determined

Table 8.3-3: Summary of aerobic degradation rates for Mesosulfuron- laboratory studies: Triggering endpoints

Mesosulfuron	Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl						
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**DT_{50} (d) 20 °C pF2/10k Pa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	76.74/254.91	0.059	-	9.3	SFO-SFO
Sandy loam (SLI)	7.5	20 / 45.2	18.73/62.20	0.236	-	18.6	SFO-SFO
Loamy Sand (SLV)	6.25	20 / 30.8	39.70/131.89	0.1914	-	14.8.	SFO-SFO
Loam (CLF)	7.3	20 / 47.5	46.35/153.97	0.262	-	13.4	SFO-SFO
Loam (FF)	7.3	20 / 43.2	73.93/245.59	0.244	-	14.6	SFO-SFO
Clay (SCL)	7.3	20 / 59.8	207.38/688.91	0.3133	-	19.3	SFO-SFO
Silt loam (SLS)	7.1	20 / 54.9	-f)	-f)	-	-f)	-f)
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	21.52/71.49	0.1678	-	26.1	SFO-SFO
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	32.95/109.46	0.197	-	11.2	SFO-SFO

a) measured in calcium chloride solution
f) no reliable value could be determined

Table 8.3-4: Summary of aerobic degradation rates for AE F160460 - laboratory studies: Triggering endpoints

AE F160460	Dark aerobic conditions Precursor from which the f.f. was derived were AE F160459 and mesosulfuron						
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**DT_{50} (d) 20 °C pF2/10k Pa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	-f)	-f)	-f)	-f)	-f)
Sandy loam (SLI)	7.5	20 / 45.2	24.14/80.20	1/1	-	12.0	SFO-SFO
Loamy Sand (SLV)	6.25	20 / 30.8	-f)	-f)	-f)	-f)	-f)
Loam (CLF)	7.3	20 / 47.5	37.07/123.15	1 M459	-	13.5	SFO-SFO
Loam (FF)	7.3	20 / 43.2	36.23/120.3	1/1	-		SFO-SFO
Clay (SCL)	7.3	20 / 59.8	-g)	-g)	-g)	-g)	-g)
Silt loam (SLS)	7.1	20 / 54.9	-g)	-g)	-g)	-g)	-g)
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	44.22/196.9	-	-	29.9	Decline fit
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	15.32/50.90	1/1	-	5.8	SFO-SFO

a) measured in calcium chloride solution
f) not observed in this soil in amounts that would allow kinetic evaluation
g) no reliable value could be determined
h) decline fit

Table 8.3-5: Summary of aerobic degradation rates for AE F099095 – laboratory studies: Triggering endpoints

AE F099095 a.k.a. IN-T5831 a.k.a. DMPU SSRE-003 a.k.a. IR7825	**Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl**						
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	185.52/616.28	0.022	-	4.5	SFO-SFO
Sandy loam (SLI)	7.5	20 / 45.2	105.21/349.49	0.021	-	13.8	SFO-SFO
Loamy Sand (SLV)	6.25	20 / 30.8	-f)	-f)	-f)	-f)	-
Loam (CLF)	7.3	20 / 47.5	80.16/266.29	0.033	-	18.4	SFO-SFO
Loam (FF)	7.3	20 / 43.2	94.19/312.89	0.043	-	9.7	SFO-SFO
Clay (SCL)	7.3	20 / 59.8	135.08/448.71	0.0264	-	25.9	SFO-SFO
Silt loam (SLS)	7.1	20 / 54.9	49.1/163.1	-	-	7.4	Decline fit
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	27.90/92.68	0.095	-	16.28	SFO-SFO
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	-g)	-g)	-	-g)	-
Sandy loam [i)]	5.3	20/pF2	58.82/195.4		-	2.73	Applied as parent SFO
Sandy clay loam [i)]	6.9	20/pF2	23.16/76.93		-	3.25	Applied as parent SFO
Clay [i)]	7.2	20/pF2	12.2/40.51		-	4.68	Applied as parent SFO

a) measured in calcium chloride solution
f) no reliable value could be determined
g) not traced at this radiolabel position
h) decline fit
i) Sadgrove, L 2014 (accepted in the RARs for flazasulfuron; refer to the EFSA conclusion on the peer review of the active flazasulfuron, EFSA, 2016c)

Table 8.3-6: Summary of aerobic degradation rates for AE F140584 - laboratory studies: Triggering endpoints

AE F140584	Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl							
Soil type (origin)		**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**DT_{50} (d) 20 °C pF2/10k Pa**	**St. (χ^2)**	**Method of calculation**
Sandy loam	-	6.3	20°C /55% MWHC	4.02/13.34	-	-	4.2	SFO
Sand	-	5.8	20°C /55% MWHC	7.04/23.38	-	-	2.1	SFO
Silt loam	-	6.4	20°C /55% MWHC	2.35/7.81	-	-	6.8	SFO
loam	-	7.2	20°C /55% MWHC	1.49/4.940	-	-	5.4	SFO
Loamy sand (CHL)		5.2	20 / 31.0	-f)	-f)	-f)	-f)	-f)
Sandy loam (SLI)		7.5	20 / 45.2	-f)	-f)	-f)	-f)	-f)
Loamy Sand (SLV)		6.25	20 / 30.8	-f)	-f)	-f)	-f)	-f)
Loam (CLF)		7.3	20 / 47.5	-f)	-f)	-f)	-f)	-f)
Loam (FF)		7.3	20 / 43.2	-f)	-f)	-f)	-f)	-f)
Clay (SCL)		7.3	20 / 59.8	-f)	-f)	-f)	-f)	-f)
Silt loam (SLS)		7.1	20 / 54.9	-f)	-f)	-f)	-f)	-f)
Loamy sand (LS 2.2, pyrimidyl label)		5.2	20 / 55.4	-f)	-f)	-f)	-f)	-f)
Loamy sand (LS 2.2, phenyl label)		6.8	20 / 38.2	13.45/44.66	0.212		39.7	SFO-SFO

a) measured in calcium chloride solution
f) not traced at this radiolabel position

Table 8.3-7: Summary of aerobic degradation rates for AE F147447 - laboratory studies: Triggering endpoints

AE F147447	Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl							
Soil type (origin)		**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**DT_{50} (d) 20 °C pF2/10k Pa**	**St. (χ^2)**	**Method of calculation**
Loam	-	6.1	20°C/55% MWHC	54.83/246.9 (slow phase: 82.71) *	-	-	2.8	HS
Sandy loam	-	6.4	20°C/55% MWHC	75.98/334.6 (slow phase: 111.38) **	-	-	2.3	HS
Silt loam	-	6.3	20°C/55% MWHC	54.76/526.00 (slow phase: 202.97) ***	-	-	3.9	HS
Clay loam	-	7.1	20°C/55% MWHC	31.12/201.2 (slow phase : 73.32) ****	-	-	3.0	DFOP
Loamy sand (CHL)		5.2	20 / 31.0	-f)	-f)	-	-f)	-f)
Sandy loam (SLI)		7.5	20 / 45.2	-f)	-f)	-	-f)	-f)
Loamy Sand (SLV)		6.25	20 / 30.8	-f)	-f)	-	-f)	-f)
Loam (CLF)		7.3	20 / 47.5	-f)	-f)	-	-f)	-f)
Loam (FF)		7.3	20 / 43.2	-f)	-f)	-	-f)	-f)
Clay (SCL)		7.3	20 / 59.8	-f)	-f)	-	-f)	-f)
Silt loam (SLS)		7.1	20 / 54.9	-f)	-f)	-	-f)	-f)
Loamy sand (LS 2.2, pyrimidyl label)		5.2	20 / 55.4	-f)	-f)	-	-f)	-f)
Loamy sand (LS 2.2, phenyl label)		6.8	20 / 38.2	157.14/522.0	0.088	-	11.9	SFO-SFO

a) measured in calcium chloride solution
f) not traced at this radiolabel position
g) single value
* k1: 0.0159 ; k2: 8.38e-3 ; tb: 31.0
** k1: 0.0133 ; k2: 6.223e-3 ; tb: 31.0
*** k1: 0.0147 ; k2: 3.415e-3 ; tb: 45.0
**** k1: 0.2054 ; k2: 9.454e-3 ; g: 0.3297

Table 8.3-8: Summary of aerobic degradation rates for AE F092944 - laboratory studies: Triggering endpoints

AE F092944 a.k.a. IN-J290, a.k.a. IN-J0290, a.k.a. ADMP, SSRE-002 a.k.a. Hoe 092944, a.k.a. CP 17477	Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl						
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**DT_{50} (d) 20 °C pF2/10k Pa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	13.97/46.39	0.919	-	23.8	SFO-SFO
Sandy loam (SLI)	7.5	20 / 45.2	-i)	-i)	-	-i)	
Loamy Sand (SLV)	6.25	20 / 30.8			-		
Loam (CLF)	7.3	20 / 47.5	62.55/207.77	0.083	-	21.3	SFO-SFO
Loam (FF)	7.3	20 / 43.2	82.67/274.6	0.080	-	44.1	SFO-SFO
Clay (SCL)	7.3	20 / 59.8	-f)	-f)	-	-f)	
Silt loam (SLS)	7.1	20 / 54.9	-f)	-f)	-	-f)	
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	80.52/267.49	0.070	-	27.1	SFO-SFO
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	-g)	-g)	-	-g)	
Collombey [j)]	7.6	20/ 44.2	2.9 / 9.6	-	-	6.3	SFO
Speyer 2.2 [j)]	6	20/ 44.3	4.9 / 34.8	-	-	2.3	FOMC
Les Evouettes [j)]	7.3	20/ 53.4	9.0 / 72.4	-	-	2.6	FOMC
Nambsheim, sandy loam [k)]	8	20/ 50	8.9 / 116	-	-	6	FOMC
Pavia, loamy sand [k)]	5.5	20/ 50	9.7 / 231.3	-	-	4	HS
Speyer 2.2 sandy loam [k)]	6.7	20/ 50	2.5 / 12	-	-	4	FOMC
Vercelli, silt loam [k)]	6.1	20/ 50	6 / 122.3	-	-	5	FOMC
Pappelacker, sandy loam [l)]	7.3	20/ 40	6.4 / 30.3	-	-	5.1	FOMC
Uffholz , loam [l)]	6.1	20/ 40	5.25 / 34.97	-	-	3.6	DFOP
Otzberg, silt loam [l)]	7.4	20/ 40	5.9 / 19.6	-	-	5.7	SFO

a) measured in calcium chloride solution
f) no reliable value could be determined
g) not traced at this radiolabel position
h) decline fit
i) not observed in this soil in amounts that would allow kinetic evaluation
j) 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, 2016b)
k) 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, 2014a)
l) 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, 2014c)

Table 8.3-9: Summary of aerobic degradation rates for BCS-CV14885- laboratory studies: Triggering endpoints

BCS-CV14885 KCA 7.1.21.2/06	Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl						
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**DT_{50} (d) 20 °C pF2/10k Pa**	**St. (χ^2)**	**Method of calculation**
Sandy loam	6.5	20/ 55	131.3/602.1 (slow phase: 202.73) *	-	-	1.3	HS
Clay loam	7.3	20/ 55	55.34/347.4 (slow phase: 129.2) **	-	-	2.5	DFOP
Silt loam	6.4	20/ 55	102.5/403.3 (slow phase: 129.54) ***	-	-	1.4	DFOP
Sandy loam	5.4	20/ 55	128.1/486.1 (slow phase: 154.19) ****	-	-	1.4	DFOP

measured in calcium chloride solution
* k1: 0.0106 ; k2: 3.42e-3 ; tb: 33.8
** k1: 0.0514 ; k2: 0,0054 ; g: 0.355
*** k1: 0.1486 ; k2: 5.351e-3 ; g: 0.1346
**** k1: 0.1644 ; k2: 0.0045; g: 0.1107

Modelling endpoints for modelling of the parent active substance and metabolites

Mesosulfuron-methyl	**Dark aerobic conditions**						
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	77.3 / 256.9	1	77.3	9.1	SFO
Sandy loam (SLI)	7.5	20 / 45.2	16.67 / 55.39	1	16.67	6.2	SFO
Loamy Sand (SLV)	6.25	20 / 30.8	71.6 / 238.0	1	71.6	7.2	SFO
Loam (CLF)	7.3	20 / 47.5	16.0 / 53.0	0.966	15.46	2.0	SFO
Loam (FF)	7.3	20 / 43.2	37.5 / 124.7	0.903	33.86	4.3	SFO
Clay (SCL)	7.3	20 / 59.8	140.10/465.40	0.718	100.59	14.8	SFO
Silt loam (SLS)	7.1	20 / 54.9	7.6 / 25.3	1.0	7.6	18.5	SFO
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	53.56/177.91	1.0	53.56	11.1	SFO
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	31.44/104.44	1	31.44	5.6	SFO
Geometric mean (if not pH dependent)					34.09		
Arithmetic mean				-			
pH dependence					No		

AE F160459	**Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl**							
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f.**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10 kPa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	-f)	-f)	-	-f)	-f)	-f)
Sandy loam (SLI)	7.5	20 / 45.2	128.64/427.34	0.124	1.0	128.64	10.2	SFO-SFO
Loamy Sand (SLV)	6.25	20 / 30.8	-f)	-f)	-	-f)	-f)	-f)
Loam (CLF)	7.3	20 / 47.5	38.60/128.23	0.119	0.966	32.29	14.3	SFO-SFO
Loam (FF)	7.3	20 / 43.2	76.0/252.47	0.092	0.903	68.63	9.9	SFO-SFO
Clay (SCL)	7.3	20 / 59.8	129.80/431.0	0.1424	0.718	93.20	21.68	SFO-SFO
Silt loam (SLS)	7.1	20 / 54.9	-g)	-g)	-	-g)	-g)	-g)
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	-g)	-g)	-	-g)	-g)	-g)
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	84.29/280.02	0.036	1.0	84.29	11.9	SFO-SFO
Geometric mean (if not pH dependent)					-	74.14		
Arithmetic mean				0.103				
pH dependence						No		

a) measured in calcium chloride solution
f) not observed in this soil in amounts that would allow kinetic evaluation
g) no reliable value could be determined

Mesosulfuron	**Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl**							
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	76.74/254.91	0.059	1.0	76.74	9.3	SFO-SFO
Sandy loam (SLI)	7.5	20 / 45.2	18.73/62.20	0.236	1.0	18.73	18.6	SFO-SFO
Loamy Sand (SLV)	6.25	20 / 30.8	38.52/127.95	0.198	1.0	38.52	15.7	SFO-SFO
Loam (CLF)	7.3	20 / 47.5	46.35/153.97	0.262	0.966	44.77	13.4	SFO-SFO
Loam (FF)	7.3	20 / 43.2	73.93/245.59	0.244	0.903	66.76	14.6	SFO-SFO
Clay (SCL)	7.3	20 / 59.8	207.38/688.91	0.3133	0.718	148.90	19.3	SFO-SFO
Silt loam (SLS)	7.1	20 / 54.9	-f)	-f)	1.0	-f)	-f)	-f)
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	21.52/71.49	0.1678	1.0	21.52	26.1	SFO-SFO
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	32.95/109.46	0.197	1.0	32.95	11.2	SFO-SFO
Geometric mean (if not pH dependent)					-	45.22		
Arithmetic mean				0.210				
pH dependence						No		

a) measured in calcium chloride solution
f) no reliable value could be determined

AE F160460	**Dark aerobic conditions Precursor from which the f.f. was derived were AE F160459 and mesosulfuron**							
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	-f)	-f)	1.0	-	-f)	-f)
Sandy loam (SLI)	7.5	20 / 45.2	24.14/80.20	1/1	1.0	24.14	12.0	SFO-SFO
Loamy Sand (SLV)	6.25	20 / 30.8	-f)	-f)	1.0	-	-f)	-f)
Loam (CLF)	7.3	20 / 47.5	37.07/123.15	1 M459	0.966	35.81	30.3	SFO-SFO
Loam (FF)	7.3	20 / 43.2	36.23/120.3	1/1	0.903	32.72	15.9	SFO-SFO
Clay (SCL)	7.3	20 / 59.8	-g)	-g)	0.718	-	-g)	-g)
Silt loam (SLS)	7.1	20 / 54.9	-g)	-g)	1.0	-	-g)	-g)
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	44.22/196.9	-	1.0	44.22	29.9	Decline fit
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	15.32/50.90	1/1	1.0	15.32	5.8	SFO-SFO
Geometric mean (if not pH dependent)						28.61		
Arithmetic mean				1/1				
pH dependence						No		

a) measured in calcium chloride solution
f) not observed in this soil in amounts that would allow kinetic evaluation
g) no reliable value could be determined
h) decline fit

AE F099095 a.k.a. IN-T5831 a.k.a. DMPU SSRE-003 a.k.a. IR7825	**Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl**							
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	185.52/616.28	0.022	1.0	185.52	4.5	SFO-SFO
Sandy loam (SLI)	7.5	20 / 45.2	105.21/349.49	0.021	1.0	105.21	13.8	SFO-SFO
Loamy Sand (SLV)	6.25	20 / 30.8	-[f)]	-[f)]	-	-	-[f)]	-
Loam (CLF)	7.3	20 / 47.5	80.16/266.29	0.033	0.966	77.43	18.4	SFO-SFO
Loam (FF)	7.3	20 / 43.2	94.19/312.89	0.043	0.903	85.05	9.7	SFO-SFO
Clay (SCL)	7.3	20 / 59.8	135.08/448.71	0.0264	0.718	96.99	25.9	SFO-SFO
Silt loam (SLS)	7.1	20 / 54.9	49.1/163.1	-	1.0	49.10	7.4	Decline fit
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	27.90/92.68	0.095	1.0	27.90	16.28	SFO-SFO
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	-[g)]	-[g)]	1.0	-	-[g)]	-
Sandy loam [i)]	5.3	20/pF2	58.82/195.4	-	1.0	58.82	2.73	Applied as parent SFO
Sandy clay loam [i)]	6.9	20/pF2	23.16/76.93	-	1.0	23.16	3.25	Applied as parent SFO
Clay [i)]	7.2	20/pF2	12.2/40.51	-	1.0	12.2	4.68	Applied as parent SFO
Geometric mean (if not pH dependent)					-	55.6		
Arithmetic mean				0.040				
pH dependence						No		

a) measured in calcium chloride solution
f) no reliable value could be determined
g) not traced at this radiolabel position
h) decline fit
i) Sadgrove, L 2014 (accepted in the RARs for flazasulfuron; refer to the EFSA conclusion on the peer review of the active flazasulfuron, EFSA, 2016c)

AE F140584	**Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl**							
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Sandy loam	6.3	20°C /55% MWHC	4.02/13.34	-	1	4.02	4.2	SFO
Sand	5.8	20°C /55% MWHC	7.04/23.38	-	1	7.04	2.1	SFO
Silt loam	6.4	20°C /55% MWHC	2.35/7.81	-	1	2.35	6.8	SFO
loam	7.2	20°C /55% MWHC	1.49/4.940	-	1	1.49	5.4	SFO
Loamy sand (CHL)	5.2	20 / 31.0	-[f)]	-[f)]	-	-[f)]	-[f)]	-[f)]
Sandy loam (SLI)	7.5	20 / 45.2	-[f)]	-[f)]	-	-[f)]	-[f)]	-[f)]
Loamy Sand (SLV)	6.25	20 / 30.8	-[f)]	-[f)]	-	-[f)]	-[f)]	-[f)]
Loam (CLF)	7.3	20 / 47.5	-[f)]	-[f)]	-	-[f)]	-[f)]	-[f)]
Loam (FF)	7.3	20 / 43.2	-[f)]	-[f)]	-	-[f)]	-[f)]	-[f)]
Clay (SCL)	7.3	20 / 59.8	-[f)]	-[f)]	-	-[f)]	-[f)]	-[f)]
Silt loam (SLS)	7.1	20 / 54.9	-[f)]	-[f)]	-	-[f)]	-[f)]	-[f)]
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	-[f)]	-[f)]	-	-[f)]	-[f)]	-[f)]
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	13.45/44.66	0.212	1.0	13.45	39.7	SFO-SFO
Geometric mean (if not pH dependent)						4.22		
Arithmetic mean				0.212 (n=1)				
pH dependence						No		

a) measured in calcium chloride solution
f) not observed in this soil in amounts that would allow kinetic evaluation
g) single value

AE F147447	**Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl**							
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Loam	6.1	20°C/55 % MWHC	60.6/201.3	–	1.0	60.6	4.9	SFO
Sandy loam	6.4	20°C/55 % MWHC	78.5/260.7	–	1.0	78.5	4.5	SFO
Silt loam	6.3	20°C/55 % MWHC	54.76/526.00 (slow phase: 202.97) ***	-	1.0	202.97	3.9	HS
Clay loam	7.1	20°C/55 % MWHC	31.12/201.2 (slow phase : 73.32) ****	-	1.0	73.32	3.0	DFOP
Loamy sand (CHL)	5.2	20 / 31.0	-f)	-f)	-	-f)	-f)	-f)
Sandy loam (SLI)	7.5	20 / 45.2	-f)	-f)	-	-f)	-f)	-f)
Loamy Sand (SLV)	6.25	20 / 30.8	-f)	-f)	-	-f)	-f)	-f)
Loam (CLF)	7.3	20 / 47.5	-f)	-f)	-	-f)	-f)	-f)
Loam (FF)[c)]	7.3	20 / 43.2	-f)	-f)	-	-f)	-f)	-f)
Clay (SCL)	7.3	20 / 59.8	-f)	-f)	-	-f)	-f)	-f)
Silt loam (SLS)	7.1	20 / 54.9	-f)	-f)	-	-f)	-f)	-f)
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	-f)	-f)	-	-f)	-f)	-f)
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	157.14/522.0	0.088	1.0	157.14	11.9	SFO-SFO
Geometric mean (if not pH dependent)					–	102.15		
Arithmetic mean				0.088				
pH dependence						No		

a) measured in calcium chloride solution
f) not traced at this radiolabel position
g) single value
*** k1: 0.0147 ; k2: 3.415e-3 ; tb: 45.0
**** k1: 0.2054 ; k2: 9.454e-3 ; g: 0.3297

AE F092944 a.k.a. IN-J290, a.k.a. IN-J0290, a.k.a. ADMP, SSRE-002 a.k.a. Hoe 092944, a.k.a. CP 17477	**Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl**							
Soil type (origin)	**pH[a]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Loamy sand (CHL)	5.2	20 / 31.0	13.97/46.39	0.919	1.0	13.97	23.8	SFO-SFO
Sandy loam (SLI)	7.5	20 / 45.2	-[i]	-[i]	-	-	-[i]	
Loamy Sand (SLV)	6.25	20 / 30.8			-	-		
Loam (CLF)	7.3	20 / 47.5	62.55/207.77	0.083	0.966	60.42	21.3	SFO-SFO
Loam (FF)	7.3	20 / 43.2	-[g]	-[g]	-[g]	-[g]	-[g]	-[g]
Clay (SCL)	7.3	20 / 59.8	-[f]	-[f]	-	-	-[f]	
Silt loam (SLS)	7.1	20 / 54.9	-[f]	-[f]	-	-	-[f]	
Loamy sand (LS 2.2, pyrimidyl label)	5.2	20 / 55.4	80.52/267.49	0.070	1.0	80.52	27.1	SFO-SFO
Loamy sand (LS 2.2, phenyl label)	6.8	20 / 38.2	-[g]	-[g]	-	-	-[g]	
Collombey [j]	7.6	20/ 44.2	2.9 / 9.6	-	-	2.9	6.3	SFO
Speyer 2.2 [j]	6	20/ 44.3	4.9 / 34.8	-	-	10.48	2.3	FOMC
Les Evouettes [j]	7.3	20/ 53.4	9.0 / 72.4	-	-	19.6	2.6	FOMC
Nambsheim, sandy loam [k]	8	20/ 50	8.9 / 116	-	-	30.8	6	FOMC
Pavia, loamy sand [k]	5.5	20/ 50	9.7 / 231.3	-	-	173.3	4	HS
Speyer 2.2 sandy loam [k]	6.7	20/ 50	2.5 / 12	-	-	3.6	4	FOMC
Vercelli, silt loam [k]	6.1	20/ 50	6 / 122.3	-	-	30.6	5	FOMC
sandy loam [l]	7.3	20/ 40	6.4 / 30.3	-	-	8	5.1	FOMC
Uffholz , loam [l]	6.1	20/ 40	5.25 / 34.97	-	-	11.2	3.6	DFOP
Otzberg, silt loam [l]	7.4	20/ 40	5.9 / 19.6	-	-	4.4	5.7	SFO
Geometric mean (if not pH dependent)			-		-	16.93		
Arithmetic mean				0.357				

a) measured in calcium chloride solution

f) not observed in this soil in amounts that would allow kinetic evaluation

g) no reliable value could be determined

h) single value

i) maximum of the two values

j) 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, 2016b)

k) 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, 2014a)

l) 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, 2014c)

BCS-CV14885 KCA 7.1.21.2/06	**Dark aerobic conditions Precursor from which the f.f. was derived was mesosulfuron-methyl**							
Soil type (origin)	**pH[a)]**	**t. oC / % MWHC**	**DT_{50}/ DT_{90} (d)**	**f. f**	**Moisture correction factor**	**DT_{50} (d) 20 °C pF2/10kPa**	**St. (χ^2)**	**Method of calculation**
Sandy loam	6.5	20/ 55	113.6/377.2	-	-	113.6	3.77	SFO
Clay loam	7.3	20/ 55	125.7/417.5	-	-	125.7	3.01	SFO
Silt loam	6.4	20/ 55	102.8/341.4	-	-	97.7	3.48	SFO
Sandy loam	5.4	20/ 55	65.06/216.1	-	-	65.06	5.23	SFO
Geometric mean (if not pH dependent)			-	-	-	97.6	-	-
Arithmetic mean			-	-	-	-	-	-
pH dependence						No		

measured in calcium chloride solution

8.3.2 Anaerobic degradation in soil (KCP 9.1.1.2)

Available data

According to RAR Mesosulfuron-methyl 2016 data with the following studies: Tarara G., (2000e) C009872; Schaefer D., (2000c), C010057; Schaefer D., (2000d) C010057; are not claimed a protection. They can be used in this documentation.

Studies on anaerobic degradation in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. EU approved endpoints were evaluated during Annex I inclusion. All relevant data are presented in : Mesosulfuron-methyl EFSA Journal 2016;14(10):4584.

Parent KCA 7.1.2.1.3/02	**Dark anaerobic conditions**						
Soil type	**Labelled-position**	**pH[a)]**	**t. °C / % MWHC**	**DT_{50} / DT_{90} (d)**	**DT_{50} (d) 20 °C[b)]**	**St. (χ^2)**	**Method of calculation**
Sandy loam	Pyrimidyl	5.4	20°C/-	30.1/-	-	-	First-order
Sandy loam	Phenyl	5.4	20°C/-	30.5/-	-	-	First-order
Geometric mean (if not pH dependent)				-	-	-	-

a) Measured in calcium chloride solution
b) Normalised using a Q10 of 2.58

AE F 160459 KCA 7.1.2.1.4/01	**Dark anaerobic conditions Precursor dosed from which the f.f. was derived was parent.**							
Soil type	**Labelled -position**	**pH[a)]**	**t. °C / % MWHC**	**DT_{50} / DT_{90} (d)**	**f. f. k_f / k_{dp}**	**DT_{50} (d) 20 °C[b)]**	**St. (χ^2)**	**Method of calculation**
Sandy loam	Pyrimidyl	5.4	20°C/-	70.2/-	-	-	-	First-order
Sandy loam	Phenyl	5.4	20°C/-	81.4/-	-	-	-	First-order
Geometric mean (if not pH dependent)				-	-	-	-	-
Arithmetic mean				-	-	-	-	-

8.4 Field studies (KCP 9.1.3)

Available data
According to RAR Mesosulfuron-methyl 2016 data with the following study; Balluff, M (2000) C009594 is not claimed a protection. This can be used in this documentation.

Studies on field degradation in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. EU approved endpoints were evaluated during Annex I inclusion. All relevant data are presented in : Mesosulfuron-methyl EFSA Journal 2016;14(10):4584.

8.4.1 Soil dissipation testing on a range of representative soils (KCP 9.1.3.1)

Available data
According to RAR Mesosulfuron-methyl 2016 data with the following study; Erzgraeber B. (2000) C010143, is not claimed a protection. This can be used in this documentation.

Mesosulfuron-methyl	**Aerobic conditions**								
Soil type (indicate if bare or cropped soil was used).	**Location (country or USA state)**	**Application period**	**pH[a)]**	**Depth (cm)**	**DT_{50} (d) actual**	**DT_{90}(d) actual**	**St. (χ^2)**	**DT_{50} (d) Norm[b)]**	**Method of calculation**
Loamy silt KCA 7.1.2.2.1/01	Germany	Spring application	6.9	0-30	41.2	137.0	-	no reliable DT50	First order
Loamy silt KCA 7.1.2.2.1/01	Germany	Autumn application	6.9	0-30	77.0	256.0	-		First order
Silty sand KCA 7.1.2.2.1/01	Germany	Spring application	5.8	0-30	62.0	206.0	-		First order
Silty sand KCA 7.1.2.2.1/01	Germany	Autumn application	5.8	0-30	109.0	362.0	-		First order
Silty sand KCA 7.1.2.2.1/01	France	Spring application	6.1	0-30	56.0	186.0	-		First order
Silty sand KCA 7.1.2.2.1/01	France	Autumn application	6.1	0-30	97.0	322.0	-		First order
Sandy silt KCA 7.1.2.2.1/01	Great Britain	Spring application	4.7	0-30	29.3	97.0	-		First order
Sandy silt KCA 7.1.2.2.1/01	Great Britain	Autumn application	4.7	0-30	114.0	378.0	-		First order
Sandy silt KCA 7.1.2.2.1/01	Italy	Spring application	7.5	0-30	72.9	242.0	-		First order
Silty loam KCA 7.1.2.2.1/01	Spain	Spring application	7.4	0-30	72.0	239.0	-		First order
Geometric mean (if not pH dependent)					-	-	-	-	-
pH dependence									

a) Measured in [medium to be stated, usually calcium chloride solution or water]
b) Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7, values are DegT50matrix

8.4.2 Soil accumulation testing (KCP 9.1.3.2)

No data available.

8.5 Mobility in soil (KCP 9.1.4)

Available data

According to RAR Mesosulfuron-methyl 2016 data with the following studies; Allan J.; Pate M.C , (2000), C003710; Rosenwald J., (2000b), C007786; Schollmeier M.; Eyrich, U., (1992), A48097; are not claimed a protection. They can be used in this documentation.

The following studies: Moendel M (2011), AS156; Hein W., (2009), AS122; Telscher, M., (2014a), EnSa-14-0627; Menke U., (2008), MEF-08/463; Traub M.,(2013), S12-00016; were presented in core assessment and latest supplements of registration report Part B, Section 8: Environmental- fate of Atlantis 12 OD revised in 03/2020.We are obliged to relied upon following studies taking account that months if study was necessary for the renewal or review of an authorisation. Product Atlantis 12 OD was renewed in 24.08.2020 under MRiRW decision R – 555/2020d and data presented was necessary for authorisation renewal. According to Official Journal of the European Union C 229/2 Period of protection is 30 months from date of first renewal of authorisation of product containing that active substance in each Member State where the data is necessary for the renewal of authorisation, therefore no new study was provided.

Studies on mobility in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.. EU approved endpoints were evaluated during Annex I inclusion. All relevant data are presented in :Mesosulfuron-methyl EFSA Journal 2016;14(10):4584.

8.5.1 Mesosulfuron-methyl and its metabolites

Table 8.5-1: Summary of soil adsorption for Mesosulfuron-methyl

Mesosulfuron-methyl KCA 7.1.3.1/01							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
Hamlet Sand (EFS-8)	0.49	5.0	-	-	1.69	345	0.85
Sandy Clay Loam (EFS-15)	2.70	7.4	-	-	3.71	137	0.93
Loamy Sand (EFS-17)	1.13	5.2	-	-	0.41	37	0.93
Loamy Sand (EFS-18)	2.34	5.2	-	-	0.71	31	0.91
Sandy Loam (EFS-19)	2.64	7.3	-	-	2.28	86	0.90
Sandy Loam (EFS-20)	0.91	6.3	-	-	0.24	26	0.92
Clay Loam (EFS-28)	1.68	7.5	-	-	0.60	36	0.93
Loam (EFS-29)	1.43	7.5	-	-	1.22	85	0.90
Silt Loam (EFS-30)	1.16	7.3	-	-	0.56	48	0.93
Geometric mean (if not pH dependent)					0.91	64	-
Arithmetic mean (if not pH dependent)					-	92	0.91
pH dependence			No				

a) Measured in calcium chloride solution

Table 8.5-2: Summary of soil adsorption for Mesosulfuron

Mesosulfuron (mesosulfuron acid) KCA 7.1.3.2/01							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
clay loam	3.15	5.8	-	119	3.1	98	0.92
silt loam	1.3	7.4	-	66	0.79	61	0.94
sandy loam	1.65	5.1	-	50	0.75	46	0.95
Geometric mean (if not pH dependent)					1.22	65	-
Arithmetic mean (if not pH dependent)					-	68	0.94
pH dependence			No				

a) Measured in calcium chloride solution

Table 8.5-3: Summary of soil adsorption for AE F099095

AE F099095, a.k.a. IN-T5831, a.k.a. DMPU SSRE-003, a.k.a. IR7825							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
clay loam	3.15	5.8	-	3856	42.8	1360	0.83
silt loam	1.3	7.4	-	365	2.94	226	0.84
sandy loam	1.65	5.1	-	206	2.33	141	0.86
sandy loam [c)]	1.3	5.7	-	-	3.05	235	0.777
sandy loam [c)]	4.3	5.3	-	-	4.81	112	0.737
sandy clay loam [c)]	3.5	7.0	-	-	4.39	126	0.78
clay [c)]	3.8	7.1	-	-	4.94	130	0.79
sand [c)]	1.1	3.9	-	-	2.05	186	0.801
loamy sand [d)]	14.42	3.38	91	628	126	874	0.817
clay [d)]	0.89	7.55	16	1854	33	3704	0.761
silt loam [d)]	2.13	5.16	4	188	11	516	0.802
Geometric mean (if not pH dependent)					8.0	334	-
Arithmetic mean (if not pH dependent)					21.6	692	0.80
pH dependence			No				

b) Measured in calcium chloride solution
c) Saggrove, 2014, (accepted in the RARs for flazasulfuron; refer to the EFSA conclusion on the peer review of the active flazasulfuron, EFSA, 2016c)
d) Refer to the EFSA conlcusion on the peer review of the active substance orthosulfamuron, EFSA, 2014b)

Table 8.5-4: Summary of soil adsorption for AE F092944

AE F092944, a.k.a. IN-J290, a.k.a. IN-J0290, a.k.a. ADMP SSRE-002, a.k.a. Hoe 092944, a.k.a. CP 17477							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
Loamy sand	1.17	5.00 [a)]	1.29	-	2.47	211	0.69
Loamy sand	2.91	5.00 [a)]	1.95	-	2.59	89	0.86
Sandy loam	1.32	4.70 [a)]	4.75	-	8.25	625	0.65
Loamy sand	0.16	8.00 [a)]	0.37	-	1.05 *	663 *	0.52 *
Sandy loam	0.26	7.95 [a)]	0.83	-	1.82 *	696 *	0.63 *
Sandy loam	1.04	6.10 [a)]	2.74	-	4.11	395	0.78
Silt loam	0.72	5.60 [a)]	130	-	81.3	11289	0.58
Silty clay	1.80	7.70 [a)]	11	-	16.5	917	0.62
Loamy sand [c)]	2.1	6.4 [b)]	-	-	1.22	58.1	0.85
Loamy sand [c)]	0.5	5.2 [b)]	-	-	2.26	452	0.81
Silt loam [c)]	3.1	5.5 [b)]	-	-	45.3	1460	0.71
Sandy loam [c)]	0.7	7.8 [b)]	-	-	0.859	123	0.79
Silt loam [c)]	1.2	5.8 [b)]	-	-	2.35	196	0.82
Loamy sand [d)]	2.29	7.0 [b)]	-	-	1.17	50.9	0.84
Loamy sand [d)]	1.17	7.7 [b)]	-	-	0.71	60.4	0.82
Sisseln, sandy loam [d)]	1.557	7.8 [b)]	-	-	0.83	52.8	0.92
Silt loam [d)]	4.05	7.3 [b)]	-	-	1.70	42.0	0.91
Silt loam [e)]	1.78	6.9 [b)]	-	-	11.54	648.3	0.72
Sandy loam [e)]	0.58	8.0 [b)]	-	-	1.92	331.0	0.68
Loamy sand [e)]	1.15	6.8 [b)]	-	-	2.59	225.2	0.79
Silty clay loam [e)]	2.0	5.8 [b)]	-	-	32.23	1611.5	0.56
Sandy loam [f)]	1.1	4.9 [a)]	-	-	13.77	1252.0	0.632
Sandy loam [f)]	1.4	6.2 [a)]	-	-	5.53	395.0	0.695
Sandy clay loam [f)]	3.3	7.6 [a)]	-	-	3.7	112.0	0.754
Slay loam [f)]	4.0	4.9 [a)]	-	-	17.99	450.0	0.429
Geometric mean (if not pH dependent)					4.4	293.9	-
Arithmetic mean (if not pH dependent)					-	956.4	0.74
pH dependence			No				

a) Measured in calcium chloride solution
b) Measured in water
* value excluded from the mean calculation
c) 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, 2014a)
d) Voelkel, W. 1995 (accepted in the RAR for nicosulfuron; refer to the EFSA conclusion on the peer review of the active substance nicosulfuron, EFSA, 2008b)
e) 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, 2014c)
f) Hiler T, 2006 (accepted in the RARs for flazasulfuron; refer to the EFSA conclusion on the peer review of the active flazasulfuron, EFSA, 2016c)

Table 8.5-5: Summary of soil adsorption for AE F160459

AE F160459 KCA 7.1.3.2/04 Additional study							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
Loam	1.8	5.3	-	-	0.1978	11.2	0.9320
Silt loam	2.4	6.6	-	-	0.3797	15.7	0.9388
Clay loam	7.42	7.3	-	-	0.7630	16.2	0.9267
Sandy loam	0.7	6.7	-	-	0.1475	21.1	0.9760
Silt loam	1.7	6.6	-	-	0.7590	44.6	0.9324
Geometric mean (if not pH dependent)					0.36	19.3	-
Arithmetic mean (if not pH dependent)					-	21.8	0.941
pH dependence			No				

e) Measured in calcium chloride solution

Table 8.5-6: Summary of soil adsorption for AE F160460.

AE F160460 KCA 7.1.3.2/05 Additional study							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
Loam	1.8	5.3	-	-	0.2069	11.5	0.9745
Silt loam	2.4	6.6	-	-	0.2258	9.4	0.8692
Clay loam	7.42	7.3	-	-	0.3488	7.6	0.8387
Sandy loam	0.7	6.7	-	-	0.0743	10.6	0.9524
Silt loam	1.7	6.6	-	-	0.5329	31.3	0.8628
Geometric mean (if not pH dependent)					0.23	12.2	-
Arithmetic mean (if not pH dependent)					-	14.1	0.900
pH dependence			No				

f) Measured in calcium chloride solution

Table 8.5-7: Summary of soil adsorption for AE F140584

AE F140584 KCA 7.1.3.2/06 Additional study							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
Geometric mean (if not pH dependent)					0	0	-
Arithmetic mean (if not pH dependent)					-	0	1
pH dependence			No				

Table 8.5-8: Summary of soil adsorption for AE F147447

AE F147447 KCA 7.1.3.2/07 Additional study							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
Sandy loam	2.1	6.4	0.097	4.6	-	-	-
Silt loam	2.5	6.8	0.096	3.8	-	-	-
Loam	1.3	6.8	0.086	6.6	-	-	-
Silt loam	2.8	5.6	0.196	7.0	-	-	-
Clay loam	4.4	7.3	0.181	4.1	-	-	-
Geometric mean (if not pH dependent)				5.1	-	-	-
Arithmetic mean (if not pH dependent)				5.2	-	-	-
pH dependence			No				

g) Measured in calcium chloride solution

Table 8.5-9: Summary of soil adsorption for BCS-CV14885

BCS-CV14885 KCA 7.1.3.2/08 Additional study							
Soil Type	**OC %**	**Soil pH[a)]**	**K_d (mL/g)**	**K_{doc} (mL/g)**	**K_F (mL/g)**	**K_{Foc} (mL/g)**	**1/n**
Loamy sand	1.7	6.2	-	-	0.30	17.5	1.17
Loam	5.1	7.0	-	-	0.96	18.8	1.07
Silt loam	2.0	6.1	-	-	0.27	13.6	1.18
loam	1.9	5.3	-	-	0.41	21.7	1.43
Geometric mean (if not pH dependent)					0.42	17.7	-
Arithmetic mean (if not pH dependent)					-	17.8	1.21
pH dependence			No				

b) Measured in calcium chloride solution

8.5.2 Column leaching (KCP 9.1.4.1)

According to RAR Mesosulfuron-methyl, September 2016 no soil column leaching study with Mesosulfuron-methyl has been performed. Instead, the mobility in soil is assessed by environmental modelling, using data on the degradation under aerobic conditions in the laboratory, and on adsorption to soil as determined from batch equilibrium experiments. In addition two lysimeter studies have been conducted with radio-labelled mesosulfuron-methyl.
According to RAR Mesosulfuron-methyl, September 2016 no soil column leaching studies with metabolites of Mesosulfuron-methyl have been performed.

8.5.3 Lysimeter studies (KCP 9.1.4.2)

Available data:

According to RAR Mesosulfuron-methyl 2016 data with the following studies; Schnoeder F., (2000a), C009987; Weller O., Ries S., (2000), C008159; Schnoeder F., (2000b), C010044; are not claimed a protection. They can be used in this documentation.

No new lysimeter studies has been performed. All relevant data and EU assessed studies are presented in: Mesosulfuron-methyl EFSA Journal 2016;14(10):4584

The leaching behaviour of Mesosulfuron-methyl and its degradation products was studied in two lysimeter experiments, for annual application timed in spring or autumn.
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. Averaged yearly concentrations in leachates (µg/L), active substance and degradates where exceeding 0.1 µg/L:

Compounds	1 year	2 year	3 year
a.s	n.d	n.d	n.d
BCS-CV14885	0.240	0.241	0.269

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

Compounds	1 year	2 year	3 year
a.s	n.a	n.d	n.d
BCS-CV14885	n.a	0.481	0.154

Even under realistic worst-case conditions for leaching, neither Mesosulfuron-methyl nor any of its metabolites identified in the laboratory soil metabolism studies were detected in leachate water samples.

8.5.4 Field leaching studies (KCP 9.1.4.3)

According to RAR Mesosulfuron-methyl, September 2016 field leaching studies were not performed and are not required.

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

According to RAR Mesosulfuron-methyl 2016 data with the following study: Steinfuehrer T.; Zumdick A. ; are not claimed a protection. They can be used in this documentation.
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. EU approved endpoints were evaluated during Annex I inclusion. All relevant data are presented in: Mesosulfuron-methyl (EFSA Journal 2016;14(10):4584).

8.6.1 Mesosulfuron-methyl and its metabolites

Table 8.6-1: Summary of degradation in water/sediment of Mesosulfuron- methyl

Mesosulfuron-methyl	**Distribution: Max. sed. 20.0 % after 7 d KCA 7.2.2.3/01 KCA 7.2.2.3/06**									
Water / sediment system	**pH water phase**	**pH sed [a)]**	**t. °C**	**DT_{50} / DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} / DT_{90} Water; level I**	**St. (χ^2)**	**DT_{50} / DT_{90} Sed; level I**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	81.15/269.6	2.6	72.7/241.5	3.2	No reliable DT50 derived	-	SFO/SFO/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	68.93/228.98	3.0	61.65/204.8	2.5	62.83/208.7	8.7	SFO/SFO/SFO
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	26.82/89.08	9.7	12.79/68.19 (back-DT50: 20.53)	4.5	79.32/263.5	22.1	SFO/FOMC/SFO
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	22.81/75.78	8.1	14.42/47.9	7.9	44.45/147.6	23.2	SFO/SFO/SFO
Geometric mean at 20°C[b)]				43.01/-	-	33.9/-	-	60.51/-	-	

a) Measured in calcium chloride solution
b) Normalised using a Q10 of 2.58

AE F154851	**Distribution: Max in total system 4.9 % after 14 days, kinetic formation fraction (kf/kdp): - KCA 7.2.2.3/01 KCA 7.2.2.3/06**									
Water / sediment system	**pH water phase**	**pH sed [a)]**	**t. °C**	**DT_{50} / DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} / DT_{90} Water**	**St. (χ^2)**	**DT_{50} / DT_{90} Sed**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	1000	-	-/-	-	-/-	-	-/-/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	100.04/332.34	8.2	-/-	-	-/-	-	SFO/-/-
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	11.03/36.64	33.3	33.11/110.0	13.10	-/-	-	SFO/SFO/-
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	8.12/26.98	27.0	25.29/84.02	6.8	-/-	-	SFO/SFO/-
Geometric mean at 20°C[b)]				54.7/-	-	-/-	-	-/-	-	-

a) Measured in [medium to be stated, usually calcium chloride solution or water]
b) Normalised using a Q10 of 2.58

AE F160459	**Distribution: Max in total system 21.6 % after 112 days kinetic formation fraction (k_f/k_{dp}): - KCA 7.2.2.3/01 KCA 7.2.2.3/06**									
Water / sediment system	**pH water phase**	**pH sed a)**	**t. °C**	**DT_{50} / DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} / DT_{90} Water;**	**St. (χ^2)**	**DT_{50} / DT_{90} Sed**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	1000	-	-/-	-	-/-	-	-/-/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	77.39/257.08	6.9	-/-	-	-/-	-	SFO/-/-
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	43.98/146.11	10.5	83.85/278.5	5.3	-/-	-	SFO/SFO/-
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	17.45/57.98	23.1	51.43/170.8	14.6	-/-	-	SFO/SFO/-
Geometric mean at 20°C b)				87.8/-	-	-/-	-	-/-	-	-

c) Measured in [medium to be stated, usually calcium chloride solution or water]
d) Normalised using a Q10 of 2.58

AE F160460	**Distribution: Max in total system 8.4 % after 28 days kinetic formation fraction (k_f/k_{dp}): - KCA 7.2.2.3/01 KCA 7.2.2.3/06**									
Water / sediment system	**pH water phase**	**pH sed a)**	**t. °C**	**DT_{50} / DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} / DT_{90} Water**	**St. (χ^2)**	**DT_{50} / DT_{90} Sed**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	1000	-	-/-	-	-/-	-	-/-/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	1000	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	101.6/337.4	4.4	-/-	-	-/-	-	Peak down
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	111.0/368.7	6.1	70.59/234.5	2.6	-/-	-	Peak down
Geometric mean at 20°C b)				325.9/-	-	-/-	-	-/-	-	-

e) Measured in [medium to be stated, usually calcium chloride solution or water]
f) Normalised using a Q10 of 2.58

AE F147447	**Distribution: Max in total system 10.9 % after 141 days kinetic formation fraction (k_f/k_{dp}): - KCA 7.2.2.3/01 KCA 7.2.2.3/06**									
Water / sediment system	**pH water phase**	**pH sed a)**	**t. °C**	**DT_{50} / DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} / DT_{90} Water**	**St. (χ^2)**	**DT_{50} / DT_{90} Sed**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	1000	-	-/-	-	-/-	-	-/-/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	-	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	1000	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	-	-	-/-	-	-/-	-	-/-/-
Geometric mean at 20°C b)				1000/-	-	-/-/-	-	-/-/-	-	-

g) Measured in [medium to be stated, usually calcium chloride solution or water]
h) Normalised using a Q10 of 2.58

AE F092944	**Distribution: Max in total system 3.2 % after 112 days, kinetic formation fraction (k_f/k_{dp}): - KCA 7.2.2.3/01 KCA 7.2.2.3/06**										
Water / sediment system	**pH water phase**	**pH sed [a)]**	**t. °C**	**DT_{50} /DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} /DT_{90} Water**	**St. (χ^2)**	**DT_{50} /DT_{90} Sed**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	-	-	-/-	-	-/-	-	-/-/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	1000	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	-	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	1000	-	-/-	-	-/-	-	-/-/-
Geometric mean at 20°C[b)]				1000/-	-	-/-/-	-	-/-	-	-

i) Measured in [medium to be stated, usually calcium chloride solution or water]
j) Normalised using a Q10 of 2.58

AE F099095	**Distribution: Max in total system 0.9 % after 141 days kinetic formation fraction (k_f/k_{dp}): - KCA 7.2.2.3/01 KCA 7.2.2.3/06**									
Water / sediment system	**pH water phase**	**pH sed [a)]**	**t. °C**	**DT_{50} /DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} /DT_{90} Water**	**St. (χ^2)**	**DT_{50} /DT_{90} Sed**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	-	-	-/-	-	-/-	-	-/-/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	-	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	-	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	-	-	-/-	-	-/-	-	-/-/-
Geometric mean at 20°C[b)]				-/-	-	-/-	-	-/-	-	-

k) Measured in [medium to be stated, usually calcium chloride solution or water]
l) Normalised using a Q10 of 2.58

BCS-CV14885	**Distribution: Max in total system 22.0 % after 309 days kinetic formation fraction (k_f/k_{dp}): - KCA 7.2.2.3/01 KCA 7.2.2.3/06**									
Water / sediment system	**pH water phase**	**pH sed [a)]**	**t. °C**	**DT_{50} /DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} /DT_{90} Water**	**St. (χ^2)**	**DT_{50} /DT_{90} Sed**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	-	-	-/-	-	-/-	-	-/-/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	-	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	-	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	-	-	-/-	-	-/-	-	-/-/-
Geometric mean at 20°C[b)]				-/-	-	-/-	-	-/-	-	-

m) Measured in [medium to be stated, usually calcium chloride solution or water]
n) Normalised using a Q10 of 2.58

BCS-CO60720	**Distribution: Max in total system 13.1 % after 365 days** **kinetic formation fraction (k_f/k_{dp}): -** **KCA 7.2.2.3/01** **KCA 7.2.2.3/06**									
Water / sediment system	**pH water phase**	**pH sed [a)]**	**t. °C**	**DT_{50} / DT_{90} whole sys.**	**St. (χ^2)**	**DT_{50} / DT_{90} Water**	**St. (χ^2)**	**DT_{50} / DT_{90} Sed**	**St. (χ^2)**	**Method of calculation**
Kies ([^{14}C-*phenyl*]-label)	7.2	7.2	20	-	-	-/-	-	-/-	-	-/-/-
Kies ([^{14}C-*pyrimidyl*]-label)	7.2	7.2	20	-	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*phenyl*]-label)	7.8	6.4	20	-	-	-/-	-	-/-	-	-/-/-
Nidda ([^{14}C-*pyrimidyl*]-label)	7.8	6.4	20	-	-	-/-	-	-/-	-	-/-/-
Geometric mean at 20°C[b)]				-/-	-	-/-	-	-/-	-	-

o) Measured in [medium to be stated, usually calcium chloride solution or water]
p) Normalised using a Q10 of 2.58

Table 8.6-2: Summary of observed metabolites

Metabolite	Maximum observed value in water/sediment system	Evaluated on EU level / Reference
AE F154851 Water/sediment system	Max in total system 4.9% after 14 days	Yes / EFSA Journal 2016;14(10)
AE F160459 Water/sediment system	Max in total system 21.6% after 112 days	Yes / EFSA Journal 2016;14(10)
AE F160460 Water/sediment system	Max in total system 8.4% after 28 days	Yes / EFSA Journal 2016;14(10)
AE F147447 Water/sediment system	Max in total system 10.9% after 141 days	Yes / EFSA Journal 2016;14(10)
AE F092944 Water/sediment system	Max in total system 3.2% after 112 days	Yes / EFSA Journal 2016;14(10):4584
AE F099095 Water/sediment system	Max in total system 0.9% after 141 days	Yes / EFSA Journal 2016;14(10):4584
BCS-CV14885 Water/sediment system	Max in total system 22.0% after 309 days	Yes / EFSA Journal 2016;14(10):4584
BCS-CO60720 Water/sediment system	Max in total system 13.1% after 365 days	Yes / EFSA Journal 2016;14(10):4584

zRMS comment
Information on degradation mesosulfuron-methyl and its metabolites: AE F154851, AE F160459, AE F160460, AE F147447, AE F092944, AE F099095, BCS-CV14885, BCS-CO60720 in water/sediment

systems are in accordance with EU agreed endpoints as reported in EFSA Journal 2016;14(10):4584.

8.7 Predicted Environmental Concentrations in soil (PEC_{soil}) (KCP 9.3)

8.7.1 Justification for new endpoints

All endpoints used for PEC soil calculations are EU approved and were evaluated on EU level and presented in: Mesosulfuron-methyl EFSA Journal 2016;14(10):4584.

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

Table 8.7-1: Input parameters related to application for PEC_{soil} calculations

Use No.	1	2
Crop	Winter cereals	Spring cereals
Application rate (g as/ha)	15 g as/ha	
Number of applications/interval	1/-	
Crop interception (%)	20	
Depth of soil layer (relevant for plateau concentration) (cm)	~~5 cm~~ 20cm (tillage)	

Table 8.7-2: Input parameter for active substance(s) and relevant metabolite(s) for PEC_{soil} calculations

Compound	Molecular weight (g/mol)	Max. occurrence (%)	DT50 (days)	Value in accordance to EU endpoint y/n/ Reference
Mesosulfuron-methyl	503.5	-	~~155 d~~ 140.1 d Kinetics: SFO,: worst case from lab. studies.	EFSA Journal 2016;14(10):4584
Metabolite				
Mesosulfuron	489.5	16.2	207.4	EFSA Journal 2016;14(10):4584
AE F160459	489.5	8.9	~~144.8~~ 129.8	EFSA Journal 2016;14(10):4584
AE F092944	155.2	10.1	82.7	EFSA Journal

Compound	Molecular weight (g/mol)	Max. occurrence (%)	DT50 (days)	Value in accordance to EU endpoint y/n/ Reference
				2016;14(10):4584
AE F160460	475.5	8.6	44.2	EFSA Journal 2016;14(10):4584
AE F140584	322.4	7.1	~~15.1~~ 13.5	EFSA Journal 2016;14(10):4584
AE F147447	290.3	6.5	~~833.1~~ 157.1	EFSA Journal 2016;14(10):4584
AE F099095	198.2	29.2	185.5	EFSA Journal 2016;14(10):4584

Table 8.7-3: PEC$_{soil}$ for Mesosulfuron-methyl on Winter cereals

PEC$_{soil}$ (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial		0.0160	-
Short term	24h	0.0159	0.0160
	2d	~~0.0159~~ 0.0158	0.0159
	4d	0.0157	~~0.0159~~ 0.0158
Long term	7d	0.0155	~~0.0158~~ 0.0157
	14d	~~0.0150~~ 0.0149	0.0155
	21d	~~0.0146~~ 0.0144	~~0.0153~~ 0.0152
	28d	~~0.0141~~ 0.0139	~~0.0150~~ 0.0149
	42d	~~0.0133~~ 0.0130	~~0.0146~~ 0.0144
	50d	~~0.0128~~ 0.0125	~~0.0143~~ 0.0142
	100d	~~0.0102~~ 0.0098	~~0.0129~~ 0.0126
Plateau concentration (~~5~~-20cm) after 10 years		~~0.0039~~ 0.0008	-
PEC$_{accumulation}$ (PEC$_{initial}$ +PEC$_{soil\ plateau}$)		~~0.0199~~ 0.0168	

Table 8.7-4: PEC$_{soil}$ for Mesosulfuron-methyl on Spring cereals

PEC$_{soil}$ (mg/kg)		Spring cereals	
		Single application	
		Actual	TWA
Initial		0.0160	-
Short term	24h	0.0159	0.0160
	2d	~~0.0159~~ 0.0158	0.0159
	4d	0.0157	~~0.0159~~ 0.0158
Long term	7d	0.0155	~~0.0158~~ 0.0157
	14d	~~0.0150~~ 0.0149	0.0155
	21d	~~0.0146~~ 0.0144	~~0.0153~~ 0.0152
	28d	~~0.0141~~ 0.0139	~~0.0150~~ 0.0149
	42d	~~0.0133~~ 0.0130	~~0.0146~~ 0.0144
	50d	~~0.0128~~ 0.0125	~~0.0143~~ 0.0142
	100d	~~0.0102~~ 0.0098	~~0.0129~~ 0.0126
Plateau concentration (~~5~~ 20cm) after 10 years		~~0.0039~~ 0.0008	-
PEC$_{accumulation}$ (PEC$_{initial}$ +PEC$_{soil\ plateau}$)		~~0.0199~~ 0.0168	

Table 8.7-5: PEC$_{soil}$ for Mesosulfuron on Winter cereals

PEC$_{soil}$ (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial		~~0.0014~~ 0.0025	-
Short term	24h	~~0.0014~~ 0.0025	~~0.0014~~ 0.0025
	2d	~~0.0014~~ 0.0025	~~0.0014~~ 0.0025
	4d	~~0.0014~~ 0.0025	~~0.0014~~ 0.0025
Long term	7d	~~0.0014~~	~~0.0014~~

		0.0025	0.0025
	14d	~~0.0014~~ 0.0024	~~0.0014~~ 0.0025
	21d	~~0.0014~~ 0.0024	~~0.0014~~ 0.0024
	28d	~~0.0014~~ 0.0024	~~0.0014~~ 0.0024
	42d	~~0.0014~~ 0.0024	~~0.0014~~ 0.0024
	50d	~~0.0014~~ 0.0023	~~0.0014~~ 0.0023
	100d	~~0.0014~~ 0.0021	~~0.0014~~ 0.0021
Plateau concentration (~~5~~ 20 cm) after 10 year		~~0.0015~~ 0.0003	-
$PEC_{accumulation}$ ($PEC_{initial}$ + $PEC_{soil\ plateau}$)		~~0.0029~~ 0.0028	-

Table 8.7-6: PEC_{soil} for Mesosulfuron on Spring cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial		~~0.0014~~ 0.0025	-
Short term	24h	~~0.0014~~ 0.0025	~~0.0014~~ 0.0025
	2d	~~0.0014~~ 0.0025	~~0.0014~~ 0.0025
	4d	~~0.0014~~ 0.0025	~~0.0014~~ 0.0025
Long term	7d	~~0.0014~~ 0.0025	~~0.0014~~ 0.0025
	14d	~~0.0014~~ 0.0024	~~0.0014~~ 0.0025
	21d	~~0.0014~~ 0.0024	~~0.0014~~ 0.0024
	28d	~~0.0014~~ 0.0024	~~0.0014~~ 0.0024
	42d	~~0.0014~~ 0.0024	~~0.0014~~ 0.0024
	50d	~~0.0014~~ 0.0023	~~0.0014~~ 0.0023
	100d	~~0.0014~~	~~0.0014~~

		0.0021	0.0021
Plateau concentration (~~5~~ 20cm) after 10 year		~~0.0015~~ 0.0003	-
$PEC_{accumulation}$ ($PEC_{initial}$ + $PEC_{soil\ plateau}$)		~~0.0029~~ 0.0028	

Table 8.7-7: PEC_{soil} for AE F160459 on Winter cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial		~~0.0005~~ 0.0014	-
Short term	24h	~~0.0006~~ 0.0014	~~0.0006~~ 0.0014
	2d	~~0.0006~~ 0.0014	~~0.0006~~ 0.0014
	4d	~~0.0006~~ 0.0014	~~0.0006~~ 0.0014
Long term	7d	~~0.0006~~ 0.0013	~~0.0006~~ 0.0014
	14d	~~0.0006~~ 0.0013	~~0.0006~~ 0.0013
	21d	~~0.0006~~ 0.0012	~~0.0006~~ 0.0013
	28d	~~0.0006~~ 0.0012	~~0.0006~~ 0.0013
	42d	~~0.0006~~ 0.0011	~~0.0006~~ 0.0012
	50d	~~0.0006~~ 0.0011	~~0.0006~~ 0.0012
	100d	~~0.0005~~ 0.0008	~~0.0006~~ 0.0011
Plateau concentration (~~5~~ 20cm) after 10 year		~~0.0005~~ 0.0001	-
$PEC_{accumulation}$ ($PEC_{initial}$ + $PEC_{soil\ plateau}$)		~~0.0010~~ 0.0014	-

Table 8.7-8: PEC_{soil} for AE F160459 on Spring cereals

PEC_{soil} (mg/kg)	Winter cereals	
	Single application	
	Actual	TWA

Initial		~~0.0005~~ 0.0014	-
Short term	24h	~~0.0006~~ 0.0014	~~0.0006~~ 0.0014
	2d	~~0.0006~~ 0.0014	~~0.0006~~ 0.0014
	4d	~~0.0006~~ 0.0014	~~0.0006~~ 0.0014
Long term	7d	~~0.0006~~ 0.0013	~~0.0006~~ 0.0014
	14d	~~0.0006~~ 0.0013	~~0.0006~~ 0.0013
	21d	~~0.0006~~ 0.0012	~~0.0006~~ 0.0013
	28d	~~0.0006~~ 0.0012	~~0.0006~~ 0.0013
	42d	~~0.0006~~ 0.0011	~~0.0006~~ 0.0012
	50d	~~0.0006~~ 0.0011	~~0.0006~~ 0.0012
	100d	~~0.0005~~ 0.0008	~~0.0006~~ 0.0011
Plateau concentration (~~5~~ 20cm) after 10 year		~~0.0005~~ 0.0001	-
$PEC_{accumulation}$ ($PEC_{initial}$ +$PEC_{soil\ plateau}$)		~~0.0010~~ 0.0014	-

Table 8.7-9: PEC_{soil} for AE F092944 on Winter cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial $PEC_{initial}$		0.0005	-
Short term	24h	0.0005	0.0005
	2d	0.0005	0.0005
	4d	0.0005	0.0005
Long term	7d	0.0005	0.0005
	14d	~~0.0005~~ 0.0004	0.0005
	21d	~~0.0005~~ 0.0004	0.0005
	28d	~~0.0005~~	~~0.0005~~

		0.0004	0.0004
	42d	0.0004	~~0.0005~~ 0.0004
	50d	~~0.0004~~ 0.0003	~~0.0005~~ 0.0004
	100d	~~0.0004~~ 0.0002	~~0.0005~~ 0.0003
Plateau concentration (~~5~~ 20cm) after 10 year		~~0.0002~~ <0.0001	-
$PEC_{accumulation}$ ($PEC_{initial}$ +$PEC_{soil\ plateau}$)		~~0.0007~~ 0.0005	-

Table 8.7-10: PEC$_{soil}$ for AE F092944 on Spring cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial $PEC_{initial}$		0.0005	-
Short term	24h	0.0005	0.0005
	2d	0.0005	0.0005
	4d	0.0005	0.0005
Long term	7d	0.0005	0.0005
	14d	~~0.0005~~ 0.0004	0.0005
	21d	~~0.0005~~ 0.0004	0.0005
	28d	~~0.0005~~ 0.0004	~~0.0005~~ 0.0004
	42d	~~0.0004~~ 0.0004	~~0.0005~~ 0.0004
	50d	~~0.0004~~ 0.0003	~~0.0005~~ 0.0004
	100d	~~0.0004~~ 0.0002	~~0.0005~~ 0.0003
Plateau concentration (~~5~~ 20cm) after 10 year		~~0.0002~~ <0.0001	-
$PEC_{accumulation}$ ($PEC_{initial}$ +$PEC_{soil\ plateau}$)		~~0.0007~~ 0.0005	-

Table 8.7-11: PEC$_{soil}$ for AE F160460 on Winter cereals

PEC_{soil} (mg/kg)	Winter cereals
	Single application

		Actual	TWA
Initial $PEC_{initial}$		~~0.0022~~ 0.0013	-
Short term	24h	~~0.0022~~ 0.0013	~~0.0022~~ 0.0013
	2d	~~0.0022~~ 0.0013	~~0.0022~~ 0.0013
	4d	~~0.0022~~ 0.0012	~~0.0022~~ 0.0013
Long term	7d	~~0.0022~~ 0.0012	~~0.0022~~ 0.0012
	14d	~~0.0022~~ 0.0010	~~0.0022~~ 0.0012
	21d	~~0.0022~~ 0.0009	~~0.0022~~ 0.0011
	28d	~~0.0022~~ 0.0008	~~0.0022~~ 0.0011
	42d	~~0.0021~~ 0.0007	~~0.0022~~ 0.0010
	50d	~~0.0021~~ 0.0006	~~0.0022~~ 0.0009
	100d	~~0.0019~~ 0.0003	~~0.0022~~ 0.0007
Plateau concentration (~~5~~ 20m) after 10 year		~~0.0012~~ <0.0001	-
$PEC_{accumulation}$ ($PEC_{initial}$ +$PEC_{soil\ plateau}$)		~~0.0034~~ 0.0013	-

Table 8.7-12: PEC_{soil} for AE F160460 on Spring cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial $PEC_{initial}$		~~0.0022~~ 0.0013	-
Short term	24h	~~0.0022~~ 0.0013	~~0.0022~~ 0.0013
	2d	~~0.0022~~ 0.0013	~~0.0022~~ 0.0013
	4d	~~0.0022~~ 0.0012	~~0.0022~~ 0.0013
Long term	7d	~~0.0022~~ 0.0012	~~0.0022~~ 0.0012
	14d	~~0.0022~~ 0.0010	~~0.0022~~ 0.0012

	21d	~~0.0022~~ 0.0009	~~0.0022~~ 0.0011
	28d	~~0.0022~~ 0.0008	~~0.0022~~ 0.0011
	42d	~~0.0021~~ 0.0007	~~0.0022~~ 0.0010
	50d	~~0.0021~~ 0.0006	~~0.0022~~ 0.0009
	100d	~~0.0019~~ 0.0003	~~0.0022~~ 0.0007
Plateau concentration (~~5~~ 20cm) after 10 year		~~0.0012~~ <0.0001	-
$PEC_{accumulation}$ ($PEC_{initial}$ + $PEC_{soil\ plateau}$)		~~0.0034~~ 0.0013	-

Table 8.7-13: PEC_{soil} for AE F140584 on Winter cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial $PEC_{initial}$		~~0.0002~~ 0.0007	-
Short term	24h	~~0.0002~~ 0.0007	~~0.0002~~ 0.0007
	2d	~~0.0002~~ 0.0006	~~0.0002~~ 0.0007
	4d	~~0.0002~~ 0.0005	~~0.0002~~ 0.0007
Long term	7d	~~0.0002~~ 0.0004	~~0.0002~~ 0.0006
	14d	~~0.0002~~	~~0.0002~~ 0.0005
	21d	0.0002	~~0.0002~~ 0.0004
	28d	0.0002	~~0.0002~~ 0.0004
	42d	~~0.0002~~ 0.0001	~~0.0002~~ 0.0003
	50d	0.0001	~~0.0002~~ 0.0003
	100d	0.0001	~~0.0002~~ 0.0001
Plateau concentration (~~5~~ 20cm)		<0.0001	-

after 10 year		
$PEC_{accumulation}$ ($PEC_{initial}$ +$PEC_{soil\ plateau}$)	~~0.0003~~ 0.0007	-

Table 8.7-14: PEC_{soil} for AE F140584 on Spring cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial $PEC_{initial}$		~~0.0002~~ 0.0007	-
Short term	24h	~~0.0002~~ 0.0007	~~0.0002~~ 0.0007
	2d	~~0.0002~~ 0.0006	~~0.0002~~ 0.0007
	4d	~~0.0002~~ 0.0005	~~0.0002~~ 0.0007
Long term	7d	~~0.0002~~ 0.0004	~~0.0002~~ 0.0006
	14d	~~0.0002~~	~~0.0002~~ 0.0005
	21d	0.0002	~~0.0002~~ 0.0004
	28d	0.0002	~~0.0002~~ 0.0004
	42d	~~0.0002~~ 0.0001	~~0.0002~~ 0.0003
	50d	0.0001	~~0.0002~~ 0.0003
	100d	0.0001	~~0.0002~~ 0.0001
Plateau concentration (~~5~~ 20cm) after 10 year		<0.0001	-
$PEC_{accumulation}$ ($PEC_{initial}$ +$PEC_{soil\ plateau}$)		~~0.0003~~ 0.0007	-

Table 8.7-15: PEC_{soil} for AE F147447 on Winter cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial PECact		0.0006	-
Short term	24h	0.0006	0.0006

	2d	0.0006	0.0006
	4d	0.0006	0.0006
Long term	7d	0.0006	0.0006
	14d	0.0006	0.0006
	21d	~~0.0006~~ 0.0005	0.0006
	28d	~~0.0006~~ 0.0005	0.0006
	42d	~~0.0006~~ 0.0005	~~0.0006~~ 0.0005
	50d	~~0.0006~~ 0.0005	~~0.0006~~ 0.0005
	100d	~~0.0005~~ 0.0004	~~0.0006~~ 0.0005
Plateau concentration (~~5~~ 20cm) after 10 year		~~0.0022~~ <0.0001	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		~~0.0028~~ 0.0006	-

Table 8.7-16~~15~~: PEC_{soil} for AE F147447 on Spring cereals

PEC_{soil} (mg/kg)		Spring cereals	
		Single application	
		Actual	TWA
Initial PECact		0.0006	-
Short term	24h	0.0006	0.0006
	2d	0.0006	0.0006
	4d	0.0006	0.0006
Long term	7d	0.0006	0.0006
	14d	0.0006	0.0006
	21d	~~0.0006~~ 0.0005	0.0006
	28d	~~0.0006~~ 0.0005	0.0006
	42d	~~0.0006~~ 0.0005	~~0.0006~~ 0.0005
	50d	~~0.0006~~ 0.0005	~~0.0006~~ 0.0005
	100d	~~0.0005~~ 0.0004	~~0.0006~~ 0.0005
Plateau concentration (~~5~~ 20cm) after 10 year		~~0.0022~~ <0.0001	-

$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)	~~0.0028~~ 0.0006	-

Evaluation by zRMS PL	**PECsoil (KCP 9.1.3)**
Additional calculation	Applicant did not provide the PECsoil values of metabolite AE F099095 therefore zRMS calculated them and presented in Tables below:

Table 8.7-17: PEC_{soil} for AE F099095 on Winter cereals

PEC_{soil} (mg/kg)		Winter cereals	
		Single application	
		Actual	TWA
Initial PECact		0.0018	-
Short term	24h	0.0018	0.0018
	2d	0.0018	0.0018
	4d	0.0018	0.0018
Long term	7d	0.0018	0.0018
	14d	0.0018	0.0018
	21d	0.0017	0.0018
	28d	0.0017	0.0018
	42d	0.0016	0.0017
	50d	0.0016	0.0017
	100d	0.0014	0.0016
Plateau concentration (20cm) after 10 year		0.0003	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0021	-

Table 8.7-18: PEC_{soil} for AE F099095 on Spring cereals

PEC_{soil} (mg/kg)		Spring cereals	
		Single application	
		Actual	TWA
Initial PECact		0.0018	-
Short term	24h	0.0018	0.0018
	2d	0.0018	0.0018
	4d	0.0018	0.0018

	Long term	7d	0.0018	0.0018
		14d	0.0018	0.0018
		21d	0.0017	0.0018
		28d	0.0017	0.0018
		42d	0.0016	0.0017
		50d	0.0016	0.0017
		100d	0.0014	0.0016
	Plateau concentration (20cm) after 10 year		0.0003	-
	$PEC_{accumulation}$ (PEC_{act} + $PEC_{soil\ plateau}$)		0.0021	-

8.7.3 PEC_{soil} of CHR/H/MEZO 30 OD

Table 8.7-19 4: PEC_{soil} for formulation OD on Winter cereals

Active substance/ reparation	Appli-cation rate (g/ha)	$PEC_{initial}$ (mg/kg)	PEC_{twa}21 d (mg/kg)	Tillage depth (cm)	$PEC_{soil,plateau}$ (mg/kg)	PEC_{accu} = $PEC_{initial}$ + $PEC_{soil,plateau}$ (mg/kg)
Mesosulfuron-methyl	476.3	0.508	-	5	-	0.508

A=V x ρ

A- Application rate of CHR/H/MEZO 30 OD [g/ha]
V- volume of product– 0.5 [L/ha]
ρ- density of product- 952.6 [g/L]

$$PEC_{soil\ initial} = \frac{A}{d\ x\ a\ x\ 100}$$

A-application rate of pro – 476.3 [g/ha]
d- depth of the soil- 5 [cm]
a- density of the soil- 1.5 [g]

Table 8.7-20 6: PEC$_{soil}$ for CHR/H/MEZO 30 OD on Spring cereals

Active substance/ reparation	Applica-tion rate (g/ha)	PEC$_{initial}$ (mg/kg)	PEC$_{twa}$21 d (mg/kg)	Tillage depth (cm)	PEC$_{soil,plateau}$ (mg/kg)	PEC$_{accu}$ = PEC$_{initial}$ + PEC$_{soil,plateau}$ (mg/kg)
Mesosulfuron-methyl	476.3	0.508	-	5	-	0.508

A=V x ρ

A-Application rate of CHR/H/MEZO 30 OD– [g/ha]
V- volume of product– 0.5 [L/ha]
ρ- density of product- 952.6 [g/L]

$$\text{PEC}_{\text{soil initial}} = \frac{A}{d\ x\ a\ x\ 100}$$

A-application rate of CHR/H/MEZO 30 OD– 476.3 [g/ha]
d- depth of the soil- 5 [cm]
a- density of the soil- 1.5 [g]

Evaluation by zRMS PL	**PECsoil (KCP 9.1.3)**
Modelling	The assumptions of calculations were corrected by zRMS according to EU agreed endpoints as reported in EFSA Journal 2016;14(10):4584. For active substance: mesosulfuron-methyl and some metabolites: AE F160459, AE F140584, AE F147447 Applicant used a conservative DT50 values: - for active substance: 155 days compared to the agreed EU endpoint (140.1 days); - for meatbolite AE F160459: 144.8 days compared to the agreed EU endpoint (129.8 days); - for meatbolite AE F140584: 15.1 days compared to the agreed EU endpoint (13.5 days); - for meatbolite AE F147447: 833.1 days compared to the agreed EU endpoint (157.1 days). Moreover, Applicant for the calculation took incorrect value of depth of soil layer (relevant for plateau concentration). He used 5cm instead of 20cm (appropriate for annual plants). Additionally, PECsoil values for metabolite AE F099095 have not calculated. Taking into account the above information zRMS recalculated PECsoil values for active substance: mesosulfuron-methyl and its following metabolites: mesosulfuron, AE F160459, AE F160460, AE F140584, AE F147447, AE

	F092944. Additionally, zRMS calculated the PECsoil values for AE F099095 meatbolite, because they did not provide. The predicted environmental concentrations in soil (PECsoil) of mesosulfuron-methyl and its all metabolites were calculated according to recommendations of the FOCUS workgroup on degradation kinetics using: - appropriate DT50 values in accordance with EFSA Journal 2016;14(10):4584; - the maximum application rate: 15g as/ha/per season, considering 20% interception for winter and spring cereals. It was assumed that the active substance were distributed in the top 5 cm soil layer with a soil bulk density of 1.5 g/mL. The results corrected/obtained by the zRMS are presented in Tables from 8.7-3 to 8.7-18. The Applicant correctly calculated the PECsoil for the formulation CHR/H/MEZO 30OD. The results are shown in the Tables 8.7-19 and 8.7-20. The recalculated/calculated PECsoil values for CHR/H/MEZO 30OD, mesosulfuron-methyl as well as its metabolites: mesosulfuron, AE F160459, AE F160460, AE F140584, AE F147447, AE F092944 and AE F099095 are appropriate to be used for the subsequent risk assessment for soil organisms.
Agreed Endpoints	**Mesosulfuron-methyl:** Winter cereals Initial PEC_{soil}: 0.016 mg/kg $PEC_{accumulation}$ = 0.0168 mg/kg Spring cereals Initial PEC_{soil}: 0.016 mg/kg $PEC_{accumulation}$ = 0.0168 mg/kg **Metabolites of mesosulfuron-methyl:** **Mesosulfuron:** Winter cereals Initial PECsoil: 0.0025 mg/kg $PEC_{accumulation}$ = 0.0028 mg/kg Spring cereals Initial PECsoil: 0.0025 mg/kg $PEC_{accumulation}$ = 0.0028 mg/kg **AE F160459** Winter cereals Initial PECsoil: 0.0014 mg/kg $PEC_{accumulation}$ = 0.0014 mg/kg Spring cereals Initial PECsoil: 0.0014 mg/kg $PEC_{accumulation}$ = 0.0014 mg/kg

	AE F092944 Winter cereals Initial PECsoil: 0.0005 mg/kg $PEC_{accumulation}$ = 0.0005 mg/kg Spring cereals Initial PECsoil: 0.0005 mg/kg $PEC_{accumulation}$ = 0.0005 mg/kg **AE F160460** Winter cereals Initial PECsoil: 0.0013 mg/kg $PEC_{accumulation}$ = 0.0013 mg/kg Spring cereals Initial PECsoil: 0.0013 mg/kg $PEC_{accumulation}$ = 0.0013 mg/kg **AE F140584** Winter cereals Initial PECsoil: 0.0007 mg/kg $PEC_{accumulation}$ = 0.0007 mg/kg Spring cereals Initial PECsoil: 0.0007 mg/kg $PEC_{accumulation}$ = 0.0007 mg/kg **AE F147447** Initial PECsoil: 0.0006 mg/kg $PEC_{accumulation}$ = 0.0006 mg/kg Spring cereals Initial PECsoil: 0.0006 mg/kg $PEC_{accumulation}$ = 0.0006 mg/kg **AE F099095** Winter cereals Initial PECsoil: 0.0018 mg/kg $PEC_{accumulation}$ = 0.0021 mg/kg Spring cereals Initial PECsoil: 0.0018 mg/kg $PEC_{accumulation}$ = 0.0021 mg/kg **Formulation: CHR/H/MEZO 30OD** Winter cereals PECact = 0.508 mg/kg Spring cereals PECact = 0.508 mg/kg

8.8 Predicted Environmental Concentrations in groundwater (PEC_{gw}) (KCP 9.4)

8.8.1 Justification for new endpoints

All endpoints used for PEC groundwater calculations are EU approved and were evaluated on EU level and presented in: Mesosulfuron-methyl EFSA Journal 2016;14(10):4584.

8.8.2 Active substance(s) and relevant metabolite(s) (KCP 9.4.1)

Table 8.8-1: Input parameters related to application for PEC_{gw} calculations

Use No.	1	2
Crop	Winter cereals	Spring cereals
Application rate (g as/ha)	15 (g a.s/L)	
Number of applications/interval (d)	1/-	
~~Relative application date~~	~~161 (emergence)~~	~~15 (emergence)~~
Absolute application date (BBCH 21-32)	Châteaudun: 06.04 Hamburg: 25.04 Jokioinen: 05.05 Kremsmünster:15.04 Okehampton: 12.04 Piacenza:10.03 Porto: 03.01 Sevilla: 21.12 Thiva: 27.12	Châteaudun: 31.03 Hamburg: 16.04 Jokioinen: 28.05 Kremsmünster:16.04 Okehampton: 13.04 Piacenza*:10.03 Porto: 31.03 Sevilla*: 21.12 Thiva*: 27.12
Crop interception (%)	20	
Frequency of application	annual	
Models used for calculation	FOCUS PEARL v5.5.5, FOCUS PELMO v6.4.4,	

8.8.2.1 Mesosulfuron-methyl and its metabolites

Table 8.8-2: Input parameters related to active substance Mesosulfuron-methyl and metabolite(s) for PEC_{gw} calculations

Compound	Mesosulfuron-methyl	Mesosulfuron	AE F160459	AE F099095	AE F092944	AE F160460	AE F147447	AE F140584	BCS-CV14885	Value in accordance with EU endpoint y/n/ Reference*
Molecular weight (g/mol)	503.5	489.5	489.5	198.2	155.2	475.5	290.3	322.4	393.4	EFSA Journal 2016;14(10):4584
Water solubility mg/L):	483	483	483	483	483	483	483	483	483	EFSA Journal 2016;14(10):4584
Saturated vapour pressure (Pa):	$3.5x\ 10^{-12}$	$3.5x\ 10^{-12}$	$3.5x\ 10^{-12}$	$3.5x\ 10^{-12}$	$3.5x\ 10^{-12}$	$3.5x\ 10^{-12}$	$3.5x\ 10^{-12}$	$3.5x\ 10^{-12}$	$3.5x\ 10^{-12}$	EFSA Journal 2016;14(10):4584
DT_{50} in soil (d)	34.09	45.22	74.14	55.6	16.93	28.61	102.15	4.22	97.6	EFSA Journal 2016;14(10):4584
DT_{50} in soil (d) field	No reliable DT 50									EFSA Journal 2016;14(10):4584
K_{foc} (mL/g)/K_{fom}	64.0/37.1	65.0/37.7	19.3/11.2	692/401.4	956.4/554.8	12.2/7.08	5.1/2.96	0/0	17.7/10.3	EFSA Journal 2016;14(10):4584
1/n	0.91	0.94	0.941	0.80	0.74	0.9	1.0	1.0	1.21	EFSA Journal 2016;14(10):4584
Plant uptake factor	0	0	0	0	0	0	0	0	0	EFSA Journal 2016;14(10):4584

Compound	**Mesosulfu-ron-methyl**	**Mesosulfu-ron**	**AE F160459**	**AE F099095**	**AE F092944**	**AE F160460**	**AE F147447**	**AE F140584**	**BCS-CV14885**	**Value in accord-ance with EU endpoint y/n/ Reference***
Formation fraction		from mesosulfuron-methyl :0.210	from mesosulfuron - methyl:0.103	from mesosulfuron-methyl:0.040	from mesosulfuron -methyl:0.357	from mesosulfuron: 1 from AE F160459:1	from mesosulfuron -methyl:0.088	from mesosulfuron-methyl :0.212	from mesosulfuron-methyl:0.096	EFSA Journal 2016;14(10):4584

* Delete row in case of no pH dependence

Table 8.8-3: PEC$_{gw}$ for Mesosulfuron-methyl and metabolites on Winter cereals (with FOCUS PEARL 5.5.5)

Crop	Scenario	80th Percentile PEC$_{gw}$ at 1 m Soil Depth (µg/L)								
		Mesosulfuron-methyl	Mesosulfuron	AE F160459	AE F099095	AE F092944	AE F160460	AE F147447	AE F140584	BCS-CV14885
Winter cereals	Châteaudun	0.001538	0.011833	0.120787	0.000001	<0.0001	0.149808	0.211231	0.000897	0.315388
	Hamburg	0.025002	0.054530	0.222962	0.000032	0.000169	0.313587	0.269652	0.012035	0.406092
	Jokioinen	0.005866	0.025530	0.226474	0.000001	0.000001	0.302772	0.398196	0.019050	0.603020
	Kremsmünster	0.020346	0.042008	0.143009	0.000006	0.000003	0.194536	0.148375	0.003441	0.222055
	Okehampton	0.031170	0.053531	0.141869	0.000009	0.000006	0.205059	0.141003	0.005332	0.212226
	Piacenza	0.007642	0.023890	0.100674	0.000011	0.000056	0.133950	0.120844	0.001673	0.176859
	Porto	0.003901	0.016682	0.100706	0.000001	<0.0001	0.137725	0.123183	0.002811	0.185789
	Sevilla	<0.0001	0.000051	0.041359	<0.0001	<0.0001	0.034417	0.102024	0.000362	0.151555
	Thiva	0.000524	0.006490	0.116024	<0.0001	<0.0001	0.114257	0.223554	0.000645	0.324696

Table 8.8-3: PEC$_{gw}$ for Mesosulfuron-methyl and metabolites on Winter cereals (with FOCUS PEARL 5.5.5)

Crop	Scenario	80th Percentile PEC$_{gw}$ at 1 m Soil Depth (µg/L)								
		Mesosulfuron-methyl	**Mesosulfuron**	**AE F160459**	**AE F099095**	**AE F092944**	**AE F160460**	**AE F147447**	**AE F140584**	**BCS-CV14885**
Winter cereals	Châteaudun	0.001093	0.008943	0.095501	<0.0001	<0.0001	**0.117263**	**0.168654**	0.000698	**0.253157**
	Hamburg	0.019419	0.043590	**0.178098**	<0.0001	<0.0001	**0.248300**	**0.216617**	0.009984	**0.327529**
	Jokioinen	0.004226	0.019490	**0.178325**	<0.0001	<0.0001	**0.233855**	**0.320455**	0.016717	**0.487504**
	Kremsmünster	0.015204	0.032682	**0.113274**	<0.0001	<0.0001	**0.152855**	**0.118631**	0.002697	**0.177899**
	Okehampton	0.021559	0.041857	**0.112161**	<0.0001	<0.0001	**0.159274**	**0.111426**	0.004349	**0.168897**
	Piacenza	0.008479	0.020749	0.077487	<0.0001	<0.0001	**0.107253**	**0.104304**	0.001362	**0.157004**
	Porto	0.018628	0.031370	0.084315	<0.0001	<0.0001	**0.110402**	**0.101599**	0.005578	**0.148793**
	Sevilla	<0.0001	<0.0001	0.026291	<0.0001	<0.0001	0.029694	0.073513	0.000303	**0.109377**
	Thiva	0.000493	0.005644	**0.101821**	<0.0001	<0.0001	**0.104460**	**0.172856**	0.000472	**0.253167**

Table 8.8-4: PEC$_{gw}$ for Mesosulfuron-methyl and metabolite(s) on Winter cereals (with FOCUS PELMO 6.6.4)

Crop	Scenario	80th Percentile PEC$_{gw}$ at 1 m Soil Depth (µg/L)								
		Mesosulfuron-methyl	Mesosulfuron	AE F160459	AE F099095	AE F092944	AE F160460	AE F147447	AE F140584	BCS-CV14885
Winter cereals	Châteaudun	<0.001	<0.001	0.015	<0.001	<0.001	0.054	0.136	<0.001	0.261
	Hamburg	<0.001	0.001	0.054	<0.001	<0.001	0.165	0.150	<0.001	0.357
	Jokioinen	<0.001	0.001	0.052	<0.001	<0.001	0.157	0.174	0.005	0.512
	Kremsmünster	<0.001	0.001	0.050	<0.001	<0.001	0.134	0.129	<0.001	0.283
	Okehampton	<0.001	0.001	0.051	<0.001	<0.001	0.133	0.099	0.001	0.207
	Piacenza	<0.001	0.001	0.020	<0.001	<0.001	0.080	0.124	<0.001	0.223
	Porto	<0.001	0.001	0.024	<0.001	<0.001	0.096	0.093	<0.001	0.171
	Sevilla	<0.001	<0.001	0.003	<0.001	<0.001	0.011	0.050	<0.001	0.127
	Thiva	<0.001	<0.001	0.004	<0.001	<0.001	0.016	0.086	<0.001	0.176

Table 8.8-4 5: PEC$_{gw}$ for Mesosulfuron-methyl and metabolite(s) on Winter cereals (with FOCUS PELMO 6.6.4)

Crop	Scenario	80th Percentile PEC$_{gw}$ at 1 m Soil Depth (µg/L)								
		Mesosulfuron-methyl	**Mesosulfuron**	**AE F160459**	**AE F099095**	**AE F092944**	**AE F160460**	**AE F147447**	**AE F140584**	**BCS-CV14885**
Winter cereals	Châteaudun	<0.001	0.003	0.007	<0.001	<0.001	**0.401**	**0.141**	<0.001	**0.261**
	Hamburg	<0.001	0.021	0.029	<0.001	<0.001	**0.223**	**0.163**	0.001	**0.353**
	Jokioinen	<0.001	0.010	0.016	<0.001	<0.001	**0.703**	**0.197**	0.007	**0.516**
	Kremsmünster	<0.001	0.018	0.024	<0.001	<0.001	**0.512**	**0.132**	0.001	**0.274**
	Okehampton	<0.001	0.023	0.028	<0.001	<0.001	**0.444**	**0.100**	0.001	**0.202**
	Piacenza	<0.001	0.012	0.018	<0.001	<0.001	**0.388**	**0.107**	0.002	**0.234**
	Porto	<0.001	0.031	0.030	<0.001	<0.001	**0.382**	0.089	0.038	**0.192**
	Sevilla	<0.001	<0.001	0.001	<0.001	<0.001	**0.179**	0.053	0.002	**0.139**
	Thiva	<0.001	0.002	0.005	<0.001	<0.001	**0.350**	**0.110**	0.002	**0.228**

Table 8.8-6: PEC$_{gw}$ for Mesosulfuron-methyl and metabolite(s) on Spring cereals (with FOCUS PEARL 5.5.5)

Crop	**Scenario**	**80th Percentile PEC$_{gw}$ at 1 m Soil Depth (µg/L)**								
		Mesosulfuron-methyl	**Mesosulfuron**	**AE F160459**	**AE F099095**	**AE F092944**	**AE F160460**	**AE F147447**	**AE F140584**	**BCS-CV14885**
Spring cereals	Châteaudun	0.001177	0.009535	0.109272	<0.0001	<0.0001	0.136930	0.166485	0.000891	0.243735
	Hamburg	0.029602	0.061388	0.284480	0.000035	0.000183	0.392726	0.344269	0.015206	0.518419
	Jokioinen	0.007101	0.028133	0.195710	0.000001	0.000001	0.275146	0.325759	0.025219	0.511022
	Kremsmünster	0.021668	0.044339	0.155468	0.000006	0.000003	0.209384	0.163580	0.003545	0.241907
	Okehampton	0.025465	0.050078	0.145150	0.000008	0.000005	0.209702	0.141438	0.005478	0.214582
	Piacenza*	0.007642	0.023890	0.100674	0.000011	0.000056	0.133950	0.120844	0.001673	0.176859
	Porto	0.006026	0.021468	0.094240	0.000001	0.000001	0.139050	0.116150	0.003628	0.176680
	Sevilla*	<0.0001	0.000051	0.041359	<0.0001	<0.0001	0.034417	0.102024	0.000362	0.151555
	Thiva*	0.000524	0.006490	0.116024	<0.0001	<0.0001	0.114257	0.223554	0.000645	0.324696

*Values extrapolated from PEC$_{gw}$ for Mesosulfuron-methyl and metabolites on Winter cereals

Table 8.8-5 ~~6~~: PEC$_{gw}$ for Mesosulfuron-methyl and metabolite(s) on Spring cereals (with FOCUS PEARL 5.5.5)

Crop	Scenario	80th Percentile PEC$_{gw}$ at 1 m Soil Depth (µg/L)								
		Mesosulfuron-methyl	Mesosulfuron	AE F160459	AE F099095	AE F092944	AE F160460	AE F147447	AE F140584	BCS-CV14885
Spring cereals	Châteaudun	0.000778	0.007079	0.086893	<0.0001	<0.0001	**0.107524**	**0.133516**	0.000703	**0.195965**
	Hamburg	0.021702	0.047839	**0.224703**	<0.0001	0.000134	**0.306940**	**0.275503**	0.012070	**0.416198**
	Jokioinen	0.004796	0.020863	**0.153306**	<0.0001	<0.0001	**0.213746**	**0.258473**	0.018978	**0.410102**
	Kremsmünster	0.016024	0.034486	**0.123128**	<0.0001	<0.0001	**0.165156**	**0.130814**	0.002779	**0.193706**
	Okehampton	0.018592	0.038757	**0.114943**	<0.0001	<0.0001	**0.165082**	**0.113100**	0.004203	**0.172188**
	Piacenza*	0.008479	0.020749	0.077487	<0.0001	<0.0001	**0.107253**	**0.104304**	0.001362	**0.157004**
	Porto	0.004306	0.016330	0.075976	<0.0001	<0.0001	**0.110255**	0.092998	0.002909	**0.142156**
	Sevilla*	<0.0001	<0.0001	0.026291	<0.0001	<0.0001	0.029694	0.073513	0.000303	**0.109377**
	Thiva*	0.000493	0.005644	**0.101821**	<0.0001	<0.0001	**0.104460**	**0.172856**	0.000472	**0.253167**

*Values extrapolated from PEC$_{gw}$ for Mesosulfuron-methyl and metabolites on Winter cereals

Table 8.8 -7: PEC$_{gw}$ for Mesosulfuron-methyl and metabolite(s) on Spring cereals (with FOCUS PELMO 6.4.4)

Crop	Scenario	80th Percentile PEC$_{gw}$ at 1 m Soil Depth (µg/L)								
		Mesosulfuron-methyl	**Mesosulfuron**	**AE F160459**	**AE F099095**	**AE F092944**	**AE F160460**	**AE F147447**	**AE F140584**	**BCS-CV14885**
Spring cereals	Châteaudun	<0.001	<0.001	0.030	<0.001	<0.001	0.105	0.104	<0.001	0.212
	Hamburg	<0.001	0.004	0.128	<0.001	<0.001	0.388	0.154	<0.001	0.337
	Jokioinen	<0.001	<0.001	0.072	<0.001	<0.001	0.189	0.194	0.005	0.489
	Kremsmünster	<0.001	0.002	0.072	<0.001	<0.001	0.181	0.125	<0.001	0.267
	Okehampton	<0.001	0.005	0.106	<0.001	<0.001	0.219	0.091	0.001	0.193
	Piacenza*	<0.001	0.001	0.020	<0.001	<0.001	0.080	0.124	<0.001	0.223
	Porto	<0.001	0.002	0.061	<0.001	<0.001	0.174	0.065	0.001	0.163
	Sevilla*	<0.001	<0.001	0.003	<0.001	<0.001	0.011	0.050	<0.001	0.127
	Thiva	<0.001	<0.001	0.004	<0.001	<0.001	0.016	0.086	<0.001	0.176

*Values extrapolated from PEC$_{gw}$ for Mesosulfuron-methyl and metabolites on Winter cereal

Table 8.8-6 7: PEC$_{gw}$ for Mesosulfuron-methyl and metabolite(s) on Spring cereals (with FOCUS PELMO 6.4.4)

Crop	Scenario	80th Percentile PEC$_{gw}$ at 1 m Soil Depth (µg/L)								
		Mesosulfuron-methyl	**Mesosulfuron**	**AE F160459**	**AE F099095**	**AE F092944**	**AE F160460**	**AE F147447**	**AE F140584**	**BCS-CV14885**
Spring cereals	Châteaudun	<0.001	0.002	0.006	<0.001	<0.001	**0.364**	**0.103**	<0.001	**0.245**
	Hamburg	<0.001	0.022	0.030	<0.001	<0.001	**0.225**	**0.160**	0.001	**0.337**
	Jokioinen	<0.001	0.010	0.015	<0.001	<0.001	**0.620**	**0.216**	0.010	**0.473**
	Kremsmünster	<0.001	0.019	0.025	<0.001	<0.001	**0.544**	**0.130**	0.001	**0.264**
	Okehampton	<0.001	0.022	0.027	<0.001	<0.001	**0.433**	0.093	0.001	**0.198**
	Piacenza*	<0.001	0.012	0.018	<0.001	<0.001	**0.388**	**0.107**	0.002	**0.234**
	Porto	<0.001	0.013	0.017	<0.001	<0.001	**0.330**	0.073	<0.001	**0.169**
	Sevilla*	<0.001	<0.001	0.001	<0.001	<0.001	**0.179**	0.053	0.002	**0.139**
	Thiva*	<0.001	0.002	0.005	<0.001	<0.001	**0.350**	**0.110**	0.002	**0.228**

*Values extrapolated from PEC$_{gw}$ for Mesosulfuron-methyl and metabolites on Winter cereals

Conclusions:

Jokioinen, Sevilla, Thiva scenarios are not relevant scenarios in whole Central Zone. Only Châteaudun, Hamburg, Kremsmünster are relevant scenarios for Poland.

For both crops (Winter cereals, Spring cereals) all PEC groundwater calculations for Mesosulfuron-methyl and metabolites have been made in two programmes: FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4. PEC_{GW} values for Mesosulfuron-methyl in both programs were below threshold value- 0.1µg/L.

In case of PECgw calculations on Winter cereals:

In FOCUS PEARL calculations PEC_{GW} values for

- 4 metabolites: were below threshold value- 0.1µg/L (Mesosulfuron, AE F099095, AE F092944, AE F140584).
- 1 metabolite: was above threshold value in 5 out of 9 scenarios (AE F160459)
- 2 metabolites were above threshold value in 8 out of 9 scenarios (AE F160460, AE F147447).
- other 2 metabolites were above threshold value in all of 9 scenarios.
- 1 metabolite was above threshold value in all of 9 scenarios (BCS-CV14885).

In FOCUS PELMO calculations on Winter cereals PEC_{GW} values for:

- 5 metabolites were below threshold value- 0.1µg/L (Mesosulfuron, AE F160459, AE F099095, AE F092944, AE F140584).
- 1 metabolite were above threshold value in all of 9 scenarios.
- 2 metabolites were above threshold value in all of 9 scenarios (BCS-CV14885, AE F160460).
- 1 metabolite was above threshold value in 7 out of 9 scenarios (AE F147447).
  other 2 metabolites were above threshold value in 4 out of 9 scenarios and 5 out of 9 scenarios

In case of PEC_{gw} calculations on Spring cereals:

In FOCUS PEARL calculations PEC_{GW} values for:

- 4 metabolites were below threshold value- 0.1µg/L (Mesosulfuron, AE F099095, AE F092944, AE F140584).
- 1 metabolite were above threshold values in 7 out of 9 scenario (AE F147447).
- 1 metabolite were above threshold values in 5 out of 9 scenario (AE F160459).
- 1 metabolite were above threshold values in 8 out of 9 scenario (AE F160460).
- Other 2 metabolites were above threshold values in 8 out of 9 scenario.
- 1 metabolite were above threshold values in all 9 scenario (BCS-CV14885).

In FOCUS PELMO calculations on Spring cereals PEC_{GW} values for:

- 4 metabolites were below threshold value- 0.1µg/L
- 1 metabolite were above threshold value in all of 9 scenarios.
- other 3 metabolites were above threshold value in: 2 out of 9 scenarios, 4 out of 9 scenarios and 5 out of 9 scenarios.
- 5 metabolites were below threshold value- 0.1µg/L (Mesosulfuron, AE F160459, AE F099095, AE F092944, AE F140584).
- 2 metabolites were above threshold value in all of 9 scenarios (AE F160460, BCS-CV14885).
- 1 metabolite was above threshold value in 6 out of 9 scenarios (AE F147447).

After comparing results of calculation PEC_{gw} for both crops all of these 4 metabolites had the highest PEC_{GW} in PEARL calculations. Metabolite AE F160459 had the highest PEC_{GW} value (0.284480 µg/L) in Hamburg scenario. Metabolite AE F160460 had the highest PEC_{GW} value (0.392726 µg/L) in Hamburg scenario. Metabolite AE F147447 had the highest PEC_{GW} value (0.398196 µg/L) in Jokioinen scenario.

Metabolite BCS-CV14885 had the highest PEC_{GW} value (0.603649 µg/L) in Jokioinen scenario.

After comparing results of calculation PEC_{gw} for both crops these metabolites had the highest PEC_{GW} in PEARL calculations (for metabolites AE F160459 and AE F147447) and PELMO calculations (for metabolites: AE F160460 and BCS-CV14885). Metabolite AE F160459 had the highest PEC_{GW} value (0.224703) in Jokioinen Hamburg scenario. Metabolite AE F160460 had the highest PEC_{GW} value (0.703) in Jokioinen scenario. Metabolite AE F147447 had the highest PEC_{GW} value (0.32045) in Jokioinen scenario. Metabolite BCS-CV14885 had the highest PEC_{GW} value (0.516) in Jokioinen scenario.

Evaluation by zRMS	**PECgw (KCP 9.2.4)**
Modelling	For the active substance mesosulfuron-methyl and its metabolites mesosulfuron, AE F160459, AE F099095, AE F092944, AE F160460, AE F147447, AE F140584 and BCS-CV14885 the calculations presented here are accepted. The applicant has used appropriate models for ground water FOCUS-PEARL 5.5.5 and FOCUS-PELMO 6.6.4. PEC_{GW} values were calculated for all intended uses for the growth stage: BBCH 21-32 on winter and spring cereals. New information and new PECgw calculations sent by the applicant at the request of zRMS are highlighted in yellow. Input parameters used in the groundwater modelling for mesosulfuron-methyl and its metabolites presented in Table 8.8-2 are in line with EU agreed endpoints reported in EFSA Journal 2016;14(10):4584. Obtained PEC_{GW} values are presented in Tables 8.8-3 and 8.8-6.
PECgw	Based on the results of performed simulations no unacceptable leaching of mesosulfuron-methyl and its metabolites AE F154851, AE F099095, AE F092944, and AE F140584 is expected following the intended Central Zone uses of CHR/H/MEZO 30 OD/Vidal 30 OD, Pacyfik 30 OD on winter and spring cereals. Mesosulfuron-methyl metabolites AE F160459, AE F160460, AE F147447 and BCS CV14885 may migrate to groundwater at concentrations >0.1 µg/L, however in line with EFSA Journal 2016;14(10):4584 they are toxicologically non-relevant and their predicted concentrations in groundwater have not exceeded 0.75 µg/L in any of the scenarios or crop. Therefore the groundwater exposure to these compounds is also considered acceptable.
Conclusion	An assessment of the metabolites of mesosulfuron-methyl: AE F160459, AE F160460, AE F147447 and BCS CV14885 regarding their relevance for groundwater was done. For the assessment of relevance please refer to Part B, Section 10 of this dRR.

8.9 Predicted Environmental Concentrations in surface water (PEC_{sw}) (KCP 9.5)

8.9.1 Justification for new endpoints

All endpoints used for PEC soil calculations are EU approved and were evaluated on EU level and presented in: Mesosulfuron-methyl EFSA Journal 2016;14(10):4584.

Table 8.9-1: Input parameters related to application for $PEC_{SW/SED}$ calculations

Plant protection product	CHR/H/.MEZO 30 OD	
Use No.	1	2
Crop	Winter cereals	Spring cereals
Application rate (kg as/ha)	0.015 kg as/ha	
Number of applications/interval (d)	1/-	
Application window	March-May (relevant for STEP 1 and 2 only)	
Application method	Spray, medium sprayer	
CAM (Chemical application method)	Appln soil linear	
Soil depth (cm)	5	
Models used for calculation	FOCUS SWASH v 5.3, FOCUS PRZM v3.3.1, FOCUS MACRO v5.5.3, FOCUS TOXWA v4.3.3	

Table 8.9-2: FOCUS Step 3 Scenario related input parameters for $PEC_{sw/sed}$ calculations for the application of CHR/H/MEZO 30 OD

Crop	Scenario	Application window used in modelling
Winter cereals (BBCH 21-32)	D3	07.04.-07.05.
	D4	09.03.-08.04.
	D5	06.03.-05.04.
	R1	15.04.-15.05.
	R3	10.03.-09.04.
	R4	1 Jan- 31 Jan
Crop	**Scenario**	**Application window used in modelling**
Spring cereals (BBCH 21-32)	D3	16.04 -16.05
	D4	09.05.-08.06
	D5	29.03.-28.04
	R1	These crops don’t cover this scenario

Crop	Scenario	Application window used in modelling
	R3	These crops don’t cover this scenario
	R4	29.03. -28.04

Table 8.9-3: Input parameters related to active substance Mesosulfuron-methyl and metabolite(s) for $PEC_{sw/sed}$ calculations STEP 1/2 and STEP 3/4

Compound	Mesosulfuron-methyl	Mesosulfuron	AEF160459	AEF099095	AE F092944	AE F160460	AE F147447	AE F140584	BCS-CV14885*	BCS-CO60720	Value in accordance to EU endpoint y/n/ Reference
Molecular weight (g/mol)	503.5	489.5	489.5	198.2	155.2	475.5	290.3	322.4	393.4	407.4	EFSA Journal 2016;14(10):4584
Saturated vapour pressure (Pa)	3.5x 10^{-12}	~~3.5x 10^{-12}~~ not required for Step 1+2	~~3.5x 10^{-12}~~ not required for Step 1+2	~~3.5x 10^{-12}~~ not required for Step 1+2	~~3.5x 10^{-12}~~ not required for Step 1+2	~~3.5x 10^{-12}~~ not required for Step 1+2	~~3.5x 10^{-12}~~ not required for Step 1+2	~~3.5x 10^{-12}~~ not required for Step 1+2	3.5x 10^{-12}	3.5x 10^{-12} not required for Step 1+2	EFSA Journal 2016;14(10):4584
Water solubility (mg/L)	483	483	483	483	483	483	483	483	483	483	EFSA Journal 2016;14(10):4584
Diffusion coefficient in water (m²/d)	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	not required for Step 1+2/ 4.3 x 10^{-5}	default
Diffusion coefficient in air (m²/d)	not required for Step 1+2/0.43	not required for Step 1+2/0.43	not required for Step 1+2/0.43	not required for Step 1+2/0.43	not required for Step 1+2/0.43	not required for Step 1+2/0.43	not required for Step 1+2/0.43	not required for Step 1+2/0.43	not required for Step 1+2/0.43	not required for Step 1+2/0.43	default
K_{foc} /K_{fom}(mL/g)	64.0/37.1	65.0/37.7	19.3/11.2	692/401.4	956.4/554.8	12.2/7.08	5.1/2.96	0/0	17.7/10.3	0/0	EFSA Journal 2016;14(10):4584
Freundlich Exponent 1/n	0.92	0.94	0.941	0.80	0.74	0.9	1.0	1.0	1.21	1	EFSA Journal 2016;14(10):4584
Plant Uptake	0	0	0	0	0	0	0	0	0	0	EFSA Journal

Compound	**Mesosulfuron-methyl**	**Mesosulfuron**	**AEF160459**	**AEF099095**	**AE F092944**	**AE F160460**	**AE F147447**	**AE F140584**	**BCS-CV14885***	**BCS-CO60720**	**Value in accordance to EU end-point y/n/ Reference**
											2016;14(10):4584
Wash-Off factor from Crop (1/mm)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	EFSA Journal 2016;14(10):4584
$DT_{50,soil}$ (d)	49.72	45.22	74.14	55.6	16.93	28.61	162.8	4.22	151.2	0.001	EFSA Journal 2016;14(10):4584
$DT_{50,water}$ (d)	43.0	56.4	87.9	1000	1000	325.9	1000	1000	1000	1000	EFSA Journal 2016;14(10):4584
$DT_{50,sed}$ (d)	43.0 1000.0	56.4	87.9	1000	1000	325.9	1000	1000	1000	1000	EFSA Journal 2016;14(10):4584
$DT_{50,whole\ system}$ (d)	43.0	56.4	87.9	1000	1000	325.9	1000	1000	1000	1000	EFSA Journal 2016;14(10):4584
Maximum occurrence observed (% molar basis with respect to the parent)	-	Soil:16.2: Total water and sediment: 4.9	Soil: 8.9 Total water and sediment:21.6	Soil: 29.2 Total water and sediment: 0.9	Soil: 10.1 Total water and sediment: 3.2	Soil:8.6 Total water and sediment:8.4	Soil: 5.8 Total water and sediment:10.9	Soil:7.1 Total water and sediment: 1.9	Soil:5.0 Total water and sediment:22.0	Soil:0.001 Total water and sediment:13.1	EFSA Journal 2016;14(10):4584

* Metabolite BCS CV14885 was implemented in the degradation scheme for the Step 3 simulations with a formulation fraction in soil of 0.096 (based on LoEP, EFSA 2016, page 60), a formation fraction in water of 1 as default worst-case value and no formation to the sediment compartment. Additionally, a 1/n of 1.21 (based on LoEP, EFSA 2016, page 60).

$PEC_{sw/sed}$

Table 8.9-4: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for Mesosulfuron-methyl following single application of CHR/H/MEZO 30OD to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	4.74	drainage/run off	4.02	2.98
Step 2	---	0.82	drainage/run off	~~0.58~~ 0.69	0.51
Northern Europe	March-May	0.82	drainage/run off	~~0.58~~ 0.69	0.51
Step 3					
D3	ditch	0.1001	drainage	0.009405	0.03285
D4	pond	0.04573	drainage	0.04441	0.1119
D4	stream	0.07589	drainage	0.02867	0.04495
D5	pond	0.02100	drainage	0.01983	0.05140
D5	stream	0.08323	drainage	0.009907	0.02421
R1	pond	0.006176	Run off/erosion	0.005369	0.009702
R1	stream	0.1025	Run off/erosion	0.005425	0.01671
R3	stream	0.2571	Run off/erosion	0.008025	0.04352
R4	stream	0.06192	Run off/erosion	0.000425	0.004477

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

According to EFSA Journal 2016;14(10):4584, for Mesosulfuron-methyl Regulatory Acceptable Concentration RAC= 0.1717 µg a.s./L and it is set by *Lemma gibba* study on the basis of ErC_{50} = 0.001717 mg a.s./$L_{(twa)}$

Table 8.9-5: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for Mesosulfuron-methyl following single application(s) of CHR/H/MEZO 30OD to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	4.74	drainage/run off	4.02	~~2.95~~ 2.98
Step 2	---	0.82	drainage/run off	~~0.58~~ 0.69	0.51
Northern Europe	March-May	0.82	drainage/run off	~~0.58~~ 0.69	0.51
Step 3					

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
D3	ditch	0.1008	Drainage	0.01053	0.03669
D4	pond	0.04931	Drainage	0.04801	0.1251
D4	stream	0.08283	Drainage	0.03016	0.05496
D5	pond	0.01915	Drainage	0.01817	0.05327
D5	stream	0.08138	Drainage	0.008049	0.02105
R1***	pond	0.006176	Run off/erosion	0.005369	0.009702
R1***	stream	0.1025	Run off/erosion	0.005425	0.01671
R3***	stream	0.2571	Run off/erosion	0.008025	0.04352
R4	stream	0.1135	Run off/erosion	0.004621	0.02265

* single applications should be marked.
** twa-time as required by ecotox
*** values extrapolated from winter cereals

According to EFSA Journal 2016;14(10):4584, for Mesosulfuron-methyl Regulatory Acceptable Concentration RAC= 0.1717 µg a.s./L and it is set by *Lemma gibba* study on the basis of ErC_{50} = 0.001717 mg a.s./L(twa)

FOCUS Step 4

Table 8.9-6: Global maximum PEC_{sw} values for Mesosulfuron-methyl , following single application of CHR/H/MEZO 30 OD to Winter cereals according to the central EU zone GAP according to surface water Step 4

PEC_{sw} (µg/L)	Scenario	STEP 4 Mesosulfuron-methyl
Nozzle reduction	Vegetative strip (m)	20
	No spray buffer (m)	5
None	D3 ditch	0.03073
None	D4 pond	0.04571
None	D4 stream	0.04028
None	D5 pond	0.02050
None	D5 stream	0.03568
None	R1 pond	0.002794
None	R1 stream	0.02287
None	R3 stream	0.06058
None	R4 stream	0.02265

Table 8.9-7: Global maximum PEC_{sw} values for Mesosulfuron-methyl , following single application of CHR/H/MEZO 30 OD to Spring cereals according to the central EU zone GAP according to surface water Step 4

PEC_{sw} (µg/L)	Scenario	STEP 4 Mesosulfuron-methyl
Nozzle reduction	Vegetative strip (m)	20
	No spray buffer (m)	5
None	D3 ditch	0.03140
None	D4 pond	0.04928
None	D4 stream	0.04349
None	D5 pond	0.01914
None	D5 stream	0.03356
None	R1 pond*	0.002794
None	R1 stream*	0.02287
None	R3 stream*	0.06058
None	R4 stream	0.02674

*Values extrapolated from winter cereals

Metabolites of Mesosulfuron-methyl

Table 8.9-87: FOCUS Step 1, 2 for Mesosulfuron following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.95	drainage/run off	~~0.81~~ 0.84	0.61
Step 2	---	0.15	drainage/run off	0.13	0.10
Northern Europe	March-May **	0.15	drainage/run off	0.13	0.10

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

According to EFSA Journal 2016;14(10):4584, for Mesosulfuron Regulatory Acceptable Concentration RAC= 110 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} = 0.11 mg a.s./$L_{(nom)}$

Table 8.9-98: FOCUS Step 1, 2 for Mesosulfuron following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.95	drainage/run off	0.84	0.61
Step 2	---	0.15	drainage/run off	0.13	0.10
Northern Europe	March-May **	0.15	drainage/run off	0.13	0.10

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

According to EFSA Journal 2016;14(10):4584, for Mesosulfuron Regulatory Acceptable Concentration RAC= 110 µg a.s./L and it is set by *Lemma gibba* study on the basis of ErC_{50} = 0.11 mg a.s./L$_{(nom)}$

Table 8.9- 109: FOCUS Step 1, 2 for AEF160459 following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	1.47	drainage/run off	1.36	0.28
Step 2	---	0.25	drainage/run off	0.23	0.05
Northern Europe	March-May **	0.25	drainage/run off	0.23	0.05

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

According to EFSA Journal 2016;14(10):4584, for AEF160459 Regulatory Acceptable Concentration RAC= 260 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} = 2.6 mg a.s./L$_{(nom)}$

Table 8.9-1110: FOCUS Step 1, 2 for AEF160459 following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	1.46	drainage/run off	1.34	0.28
Step 2	---	0.25	drainage/run off	0.23	0.05
Northern Europe	March-May **	0.25	drainage/run off	0.23	0.05

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

According to EFSAJournal 2016;14(10):4584, for AEF160459 Regulatory Acceptable Concentration RAC= 260 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} = 2.6 mg a.s./L$_{(nom)}$

Table 8.9-12~~1~~: FOCUS Step 1, 2 for AEF099095 following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.31	drainage/run off	0.31	2.13
Step 2	---	0.05	drainage/run off	0.05	0.33
Northern Europe	March-May **	0.05	drainage/run off	0.05	0.33

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

According to EFSA Journal 2016;14(10):4584, for AEF099095 Regulatory Acceptable Concentration RAC= 10000 µg a.s./L and it is set by *Lemma gibba* study on the basis of ErC_{50} >100 mg a.s./$L_{(nom)}$

Table 8.9-13~~2~~: FOCUS Step 1, 2 for AEF099095 following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.32	drainage/run off	0.31	2.13
Step 2	---	0.06	drainage/run off	0.05	0.38
Northern Europe	March-May **	0.06	drainage/run off	0.05	0.38

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

According to EFSA Journal 2016;14(10):4584, for AEF099095 Regulatory Acceptable Concentration RAC= 10000 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} >100 mg a.s./$L_{(nom)}$

Table 8.9-14~~3~~: FOCUS Step 1, 2 for AE F092944 following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.09	drainage/run off	0.09	0.87
Step 2	---	0.01	drainage/run off	0.01	0.13
Northern Europe	March-May **	0.01	drainage/run off	0.01	0.13

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

According to EFSA Journal 2016;14(10):4584, for AE F092944 Regulatory Acceptable Concentration RAC= 10000 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} >100 mg a.s./$L_{(nom)}$

Table 8.9-154: FOCUS Step 1, 2 for AE F092944 following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.09	drainage/run off	0.09	0.86
Step 2	---	0.01	drainage/run off	0.01	0.13
Northern Europe	March-May **	0.01	drainage/run off	0.01	0.13

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

According to EFSA Journal 2016;14(10):4584, for AE F092944 Regulatory Acceptable Concentration RAC= 10000 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} >100 mg a.s./$L_{(nom)}$

Table 8.9-165: FOCUS Step 1, 2 for AE F160460 following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.80	drainage/run off	0.78	0.10
Step 2	---	0.13	drainage/run off	0.13	0.02
Northern Europe	March-May **	0.13	drainage/run off	0.13	0.02

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

According to EFSA Journal 2016;14(10):4584, for AE F092944 Regulatory Acceptable Concentration RAC= 10000 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} >100 mg a.s./$L_{(nom)}$

Table 8.9-176: FOCUS Step 1, 2 for AE F160460 following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.80	drainage/run off	0.78	0.10
Step 2	---	0.13	drainage/run off	0.13	0.02
Northern Europe	March-May **	0.13	drainage/run off	0.13	0.02

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

According to EFSA Journal 2016;14(10):4584, for AE F092944 Regulatory Acceptable Concentration RAC= 10000 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} >100 mg a.s./$L_{(nom)}$

Table 8.9-187: FOCUS Step 1, 2 for AE F147447 following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.49	drainage/run off	0.48	0.02
Step 2	---	0.08	drainage/run off	0.08	0.00
Northern Europe	March-May **	0.08	drainage/run off	0.08	0.00

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

According to EFSA Journal 2016;14(10):4584, for AE F092944 Regulatory Acceptable Concentration RAC= 10000 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} >100 mg a.s./$L_{(nom)}$

Table 8.9-198: FOCUS Step 1, 2 for AE F147447 following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.49	drainage/run off	0.48	0.02
Step 2	---	0.08	drainage/run off	0.08	0.00
Northern Europe	March-May **	0.08	drainage/run off	0.08	0.00

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

According to EFSA Journal 2016;14(10):4584, for AE F147447 Regulatory Acceptable Concentration RAC= 10000 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50} >100 mg a.s./$L_{(nom)}$

Table 8.9-2019: FOCUS Step 1, 2 for AE F140584 following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.29	drainage/run off	0.29	0.00
Step 2	---	0.03	drainage/run off	0.03	0.00
Northern Europe	March-May **	0.03	drainage/run off	0.03	0.00

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

According to EFSA Journal 2016;14(10):4584, for AE F140584 Regulatory Acceptable Concentration RAC= 1000 µg a.s./L and it is set by *Lemma gibba* study on the basis of ErC_{50} >10 mg a.s./$L_{(nom)}$

Table 8.9-210: FOCUS Step 1, 2 for AE F140584 following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.25	drainage/run off	0.24	0.00
Step 2	---	0.04	drainage/run off	0.04	0.00
Northern Europe	March-May **	0.04	drainage/run off	0.04	0.00

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

According to EFSA Journal 2016;14(10):4584, for AE F140584 Regulatory Acceptable Concentration RAC= 1000 µg a.s./L and it is set by *Lemma gibba* study on the basis of ErC_{50} >10 mg a.s./$L_{(nom)}$

Table 8.9-221: FOCUS Step 1, 2 for BCS-CV14885 following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	1.05	drainage/run off	1.05	0.18
Step 2	---	0.18	drainage/run off	0.18	0.03
Northern Europe	March-May **	0.18	drainage/run off	0.18	0.03

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

According to EFSA Journal 2016;14(10):4584, for BCS-CV14885 Regulatory Acceptable Concentration (acute) >1000 µg a.s./L and it is set by *O.mykiss/D.magna* study on the basis of LC_{50}/ ErC_{50} >100 000 µg/L and Regulatory Acceptable Concentration (chronic)= 0.129 µg a.s./L and it is set by *Lemna gibba* study on the basis of ErC_{50}= 0.129 µg/L. All of these values are worst cases for that metabolite.

Table 8.9-232: FOCUS Step 1, 2 for BCS-CV14885 following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	1.05	drainage/run off	1.05	0.18
Step 2	---	0.18	drainage/run off	0.18	0.03
Northern Europe	March-May **	0.18	drainage/run off	0.18	0.03

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

According to EFSA Journal 2016;14(10):4584, for BCS-CV14885 Regulatory Acceptable Concentration (acute) >1000 µg a.s./L and it is set by *O. mykiss/D. magna* study on the basis of LC_{50}/ ErC_{50} >100 000 µg/L and Regulatory Acceptable Concentration (chronic)= 0.129 µg a.s./L and it is set by *L. gibba* study on the basis of ErC_{50}= 0.129 µg/L. All of these values are worst cases for that metabolite.

Table 8.9-243: FOCUS Step 1, 2 for BCS-CO60720 following single application to Winter cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.54	drainage/run off	0.54	0.00
Step 2	---	0.09	drainage/run off	0.09	0.00
Northern Europe	March-May **	0.09	drainage/run off	0.09	0.00

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

According to EFSA Journal 2016;14(10):4584, for BCS-CO60720 Regulatory Acceptable Concentration RAC= 1000 µg a.s./L and it is set by *P. subcapitata* study on the basis of ErC_{50} >10 mg a.s./$L_{(nom)}$

Table 8.9-254: FOCUS Step 1, 2 for BCS-CO60720 following single application to Spring cereals

Scenario FOCUS	Waterbody	Max PEC_{sw} (µg/L)*	Dominant entry route	21 d- $PEC_{sw,twa}$ (µg/L)**	Max PEC_{sed} (µg/kg)*
Step 1	---	0.54	drainage/run off	0.54	0.00
Step 2	---	0.09	drainage/run off	0.09	0.00
Northern Europe	March-May **	0.09	drainage/run off	0.09	0.00

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

According to EFSA Journal 2016;14(10):4584, for BCS-CO60720 Regulatory Acceptable Concentration RAC= 1000 µg a.s./L and it is set by *P. subcapitata* study on the basis of ErC_{50} >10 mg a.s./$L_{(nom)}$

Conclusions

In both crops Winter cereals and Spring cereals: PEC $_{sw/sed}$ values for Mesosulfuron-methyl were above RAC values. For both intended uses of product CHR/H/MEZO 30 OD in Austria, Hungary and Republic of Ireland, are necessary to maintain the 20 meters of vegetative buffer zone and 5 meters of no-spray buffer zone. For the rest of the countries from central zone these limitations are not necessary.

For all metabolites PEC $_{sw/sed}$ values were below RAC values.

8.9.2.3 $PEC_{sw/sed}$ of CHR/H/MEZO 30 OD on Winter cereals

Table 8.9.2.3-1 PECsw/sed of formulation OD on Winter cereals

<table>
<tr><td>Methods of calculation</td><td colspan="2">Drift calculator in SWASH tool calculating instantaneous PEC_{sw} at a single drift event 1 m from the field</td></tr>
<tr><td>Application rate for formulation OD [g ai/ha]</td><td colspan="2">476.3</td></tr>
<tr><td>Crop</td><td colspan="2">Winter cereals</td></tr>
<tr><td rowspan="3">Results [µg/L]</td><td>FOCUS ditch (FOCUS values)</td><td>3.0601</td></tr>
<tr><td>FOCUS pond (FOCUS values)</td><td>0.1043</td></tr>
<tr><td>FOCUS stream (FOCUS values)</td><td>2.2709</td></tr>
</table>

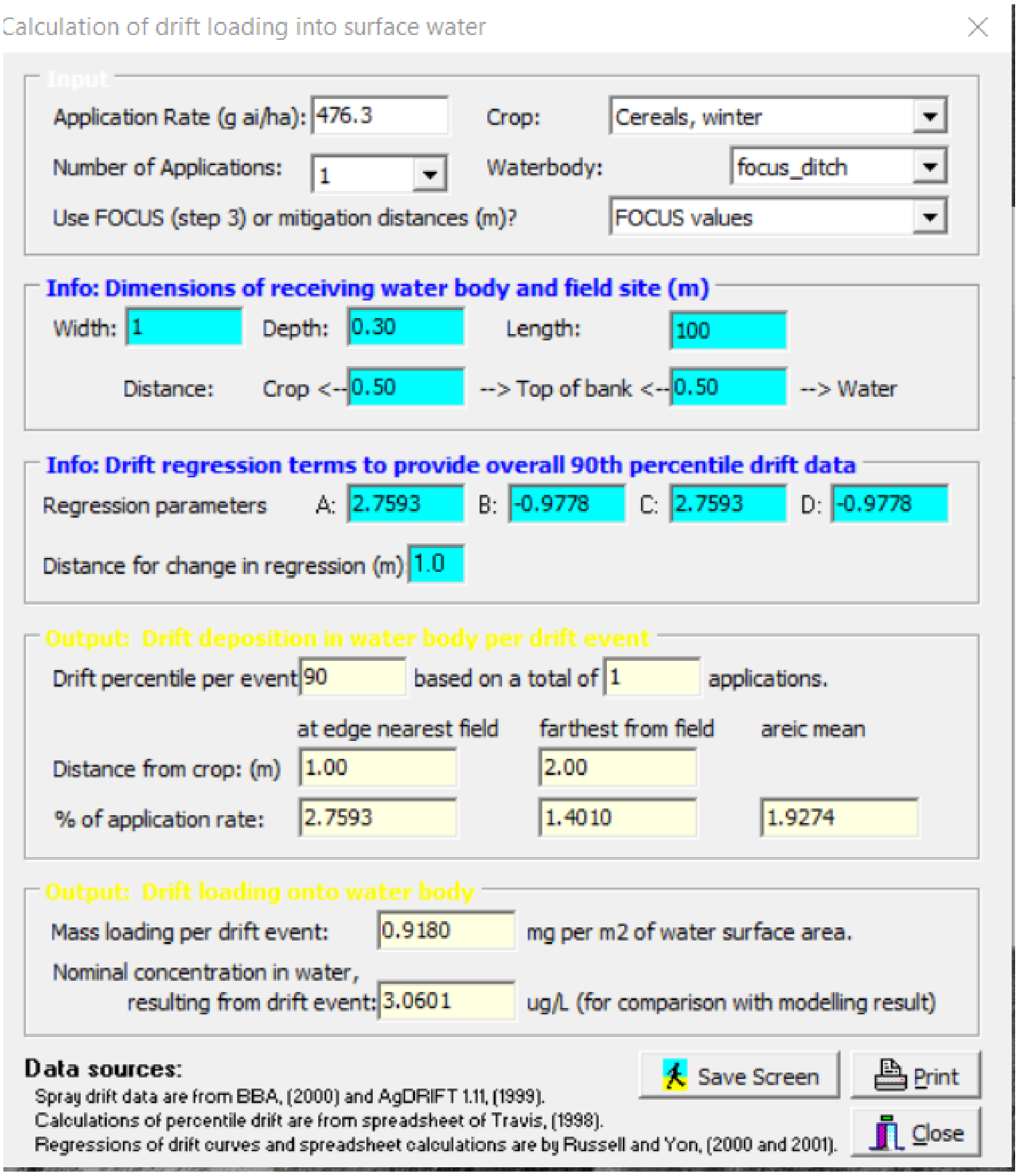
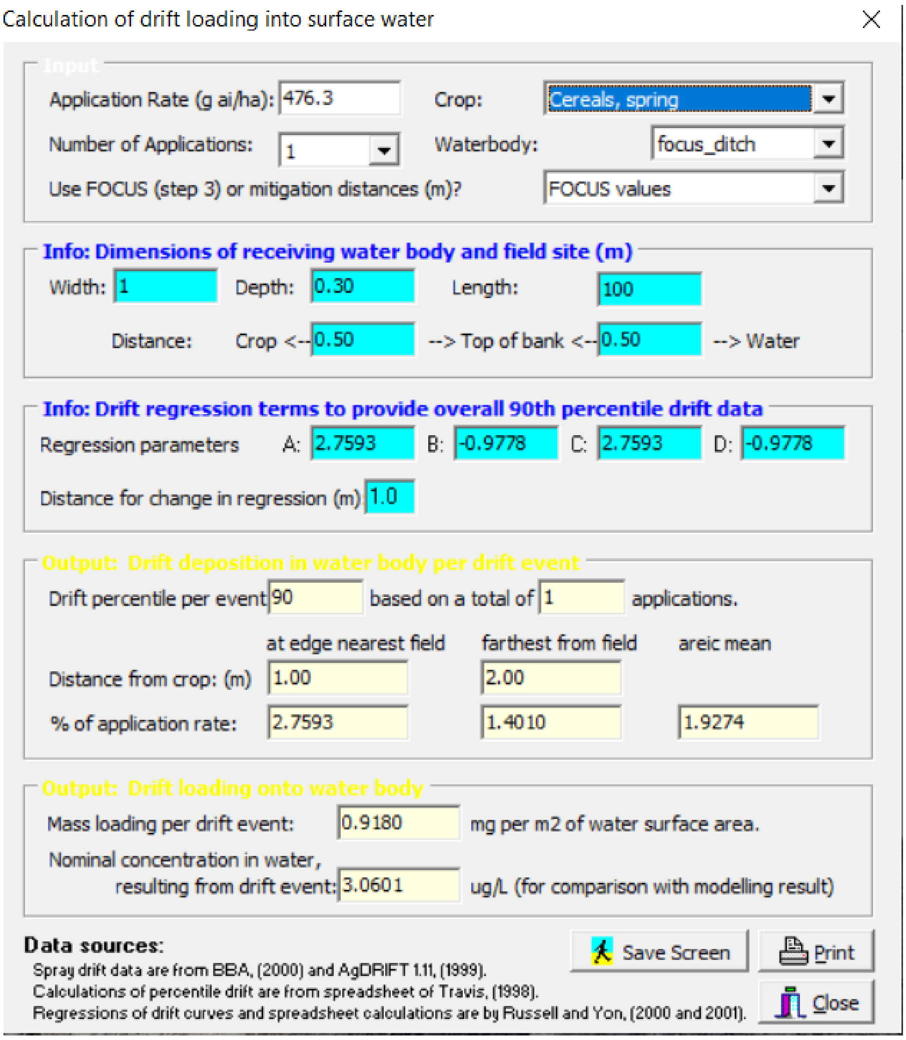


Table 8.9.2.3-2 PECsw/sed of CHR/H/MEZO 30 OD on Spring cereals

Methods of calculation	Drift calculator in SWASH tool calculating instantaneous PECsw at a single drift event 1 m from the field	
Application rate for formulation OD [g ai/ha]	476.3	
Crop	Spring cereals	
Results [µg/L]	FOCUS ditch (FOCUS values)	**3.0601**
	FOCUS pond (FOCUS values)	0.1043
	FOCUS stream (FOCUS values)	2.2709



Evaluation by zRMS	PECsw (KCP 9.2.5)

Inputs for Modelling

For the active substance mesosulfuron-methyl and its metabolites: mesosulfuron, AE F160459, AE F099095, AE F160460, AE F140584, AE F147447, AE F092944, BCS-CV14885 and BCS-CO60720 the calculations presented here are accepted. However, zRMS made minor improvements where required.
Additionally, for BCS-CV14885 metabolite zRMS calculated PECsw/sed at Step 3. The results of calculation were provided below in Tables.
FOCUS Step 3 PECsw and PECsed for **BCS-CV14885** metabolite following single application of CHR/H/MEZO 30OD to winter cereals (BCCH 21-32)

Scenario FOCUS	**Waterbody**	**Max PEC_{SW} (µg/L)**	**Dominant entry route**	**21 d-$PEC_{SW,twa}$ (µg/L)**	**Max PEC_{SED} (µg/kg)**
Step 3					
D3	ditch	0.04284	Spraydrift	0.04278	0.03270
D4	pond	0.09712	Drainflow	0.09686	0.06620
D4	stream	0.04057	Spraydrift	0.03806	0.02304
D5	pond	0.05570	Spraydrift	0.05543	0.04008
D5	stream	0.01958	Spraydrift	0.01732	0.009453
R1	pond	0.002039	Runoff	0.002034	0.001204
R1	stream	0.005320	Runoff	0.000229	0.000272
R3	stream	0.01531	Runoff	0.000425	0.000863
R4	stream	0.000363	Runoff	0.000003	0.000010

FOCUS Step 3 PECsw and PECsed for **BCS-CV14885** metabolite following single application of CHR/H/MEZO 30OD to spring cereals (BCCH 21-32)

Scenario FOCUS	**Waterbody**	**Max PEC_{SW} (µg/L)**	**Dominant entry route**	**21 d-$PEC_{SW,twa}$ (µg/L)**	**Max PEC_{SED} (µg/kg)**
Step 3					
D3	ditch	0.04355	Spraydrift	0.04349	0.03357
D4	pond	0.09355	Drainflow	0.09236	0.06480
D4	stream	0.03615	Spraydrift	0.03423	0.02254
D5	pond	0.05379	Spraydrift	0.05354	0.03868
D5	stream	0.01874	Spraydrift	0.01627	0.008879
R1***	pond	0.002039	Runoff	0.002034	0.001204
R1***	stream	0.005320	Runoff	0.000229	0.000272
R3***	stream	0.01531	Runoff	0.000425	0.000863
R4	stream	0.006509	Runoff	0.000256	0.000419

*** values extrapolated from winter cereals

Predicted environmental concentrations in surface water (PEC_{sw}) and sediment

	(PEC_{sed}) were calculated for mesosulfuron-methyl and its metabolites after the application of the product CHR/H/MEZO 30 OD to winter and spring cereals: - 1x 0.5l product CHR/H/MEZO 30 OD /ha; considering the pathways spray drift, drainage and runoff. Input parameters used in FOCUS surface water/sediment modelling for active substance and its metabolites are correct. The application windows presented in Table 8.9-2 for each scenario was checked by the zRMS using AppDate ver. 3.06 tool and is considered acceptable. The PEC_{SW} and PEC_{sed} were calculated in compliance with relevant FOCUS scenarios in stepwise procedure (Steps 1, 2, 3 and 4). The calculations were carried out at Step 1 to Step 4 for mesosulfuron-methyl. For the metabolites, the values of the PEC_{SW} and PEC_{sed} were calculated at Step 1 and 2. As indicated above for the BCS-CV14885 metabolite, PECsw/sed calculations were added at Step 3. **CHR/H/MEZO 30 OD** Calculations of PEC_{SW} values for formulation has been provided by Applicant only for FOCUS ditch. zRMS completed this calculation with waterbodies: FOCUS pond and FOCUS stream. The results was presented in Tables above. Presented calculations of $PEC_{sw/sed}$ may be used for risk assessment.
Agreed endpoints	Please refer to Tables from 8.9-4 to 8.9-25 and from 8.9.2.3-1 to 8.9.2.3-2.
Implication for risk assessment	Please refer to Part B, Section 9 of this dRR.

8.10 Fate and behaviour in air (KCP 9.6)

Table 8.10-1 Summary of atmospheric degradation and behaviour

Compound	Mesosulfuron-methyl
Direct photolysis in air	No data
Quantum yield of direct phototransformation	No data
Photochemical oxidative degradation in air	DT_{50} of 0.05 days derived by the Atkinson model OH (12h) concentration assumed =1.5x 10^6
Volatilisation	~~No data~~ Vapour pressure (Pa): 3.5 x 10^{-12} at 20ºC Henry's Law Constant (Pa.m3/mol): 3.649 x 10^{-12} at pH7 and 20ºC
Metabolites	-

Evaluation by zRMS	**Fate and behaviour in air (KCP 9.3)**
Comments	The data on the atmospheric degradation and behaviour for the active substance follows the EU assessment and is therefore agreed by the zRMS.

Conclusion for exposure assessment	The vapour pressure at 20 °C of the active substance mesosulfuron-methyl is < 10^{-5} Pa and DT_{50} in air <2 days. Hence, the active substance mesosulfuron-methyl is regarded as non-volatile and the environmental concentrations in air and the transport through air are considered negligible.

Appendix 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 (where different from company) GLP or GEP status Published or not	Verte-brate study Y/N	Owner

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

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Verte-brate study Y/N	Owner
KCP 9.1.1.1	Tarara G	2000a	Kinetics and metabolism in soil LS 2.2 at 10 degrees C and 20 degrees C under aerobic conditions Code: (2-14C-pyrimidyl)AE F130060 Report No.: C009871 Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience, GLP yes	N	Bayer CropScience

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Verte-brate study Y/N	Owner
			unpublished		
KCP 9.1.1.1	Tarara G	2000b	Kinetics and metabolism in soil LS 2.2 at 10 degrees C and 20 degrees C under aerobic conditions Code: (U-14C-phenyl) AE F130060 Report No.: C009873 Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience, GLP: yes unpublished	N	Bayer CropScience
KCP 9.1.1.1	Tarara G	2000c	Degradation in three soils at 20 degrees C under aerobic conditions Code: (2-14C-pyrimidyl) AE F130060 Report No.: C009874, Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience, GLP: yes unpublished	N	Bayer CropScience
KCP 9.1.1.1	Tarara G	2000d	Degradation in four soils at 20 degrees C under aerobic conditions Code: (2-14C-pyrimidy)AE F130060 Report No.: C009870 Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience, GLP: yes unpublished	N	Bayer CropScience
KCP 9.1.1.2	Tarara G	2000e	Kinetics and metabolism in soil LS 2.2 at 20 degrees C under anaerobic conditions Code: (U-14C-phenyl)AE F130060 and (2-14C-pyrimidyl) AE F130060 Report No.: C009872 Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience, GLP:yes, unpublished	N	Bayer CropScience
KCP 9.1.1.1.2	Balluff, M	2000	The degradation of AE F130060 in soil following a single application of AE F130060 01 1K12 A1 at 6 locations in Europe Arbeitsgemeinschaft	N	Bayer CropScience

Data point	Author(s)	Year	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** **Published or not**	Verte-brate study Y/N	Owner
			Report No.: C009594 GAB GmbH & IFU GmbH, Germany Bayer CropScience, GLP: yes, unpublished		
KCP 9.1.1.1	Persch A	2013	Mesosulfuron-methyl-des-methyl-guanidine (BCS-CV14885): Aerobic dissipation in four European standard soils Report No.: S11-03921, Eurofins Agroscience Services GmbH, Niefern-Oeschelbronn, Germany Bayer CropScience Date: 2013-06-13 **...Amended: 2013-07-31** GLP: yes unpublished	N	Bayer CropScience
KCP 9.1.1.2	Schaefer D.	2000c	Kinetic evaluation of AE F130060 anaerobic soil degradation studies using TopFit 2.0 Code: AE F130060 Report No.: C010057, Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience, GLP: yes unpublished	N	Bayer CropScience
KCP 9.1.1.2	Schaefer D.	2000d	Kinetic evaluation of AE F130060 anaerobic soil degradation studies using TopFit 2.0 Code: AE F130060 Report No.: C010057 Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience, GLP: yes, unpublished	N	Bayer CropScience
KCP 9.1.1.2.1	Erzgraeber B.	2000	Evaluation of field dissipation data from different sites in Europe Code: AE F130060 Report No.: C010143, Aventis CropScience GmbH, Frankfurt am Main, Germany	N	Bayer CropScience

Data point	Author(s)	Year	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** **Published or not**	Verte-brate study Y/N	Owner
			GLP: no unpublished		
KCP 9.1.4	Allan J.; Pate M.C	2000	The adsorption/desorption of (14C)-AE F130060 on nine soils Code: AE F130060 Report No: C003710 Aventis CropScience USA LP, Environmental Chemistry, Pikeville, NC, USA Bayer CropScience, GLP: yes unpublished	N	Bayer CropScience
KCP 9.1.4	Rosenwald J.	2000b	AE F099095: Adsorption in three soils Report No: C007786 Covance Laboratories GmbH, Muenster, Germany GLP: yes, unpublished	N	Bayer CropScience
KCP 9.1.4	Schollmeier M.; Eyrich, U.	1992	Adsorption/Desorption of 2- Amino-4,6- dimethoxypyrimidine (Hoe 092944) in the system soil/water Report No.: A48097, Hoechst AG, Frankfurt am Main, Germany GLP: yes, unpublished	N	Bayer CropScience
KCP 9.1.4	Moendel M.	2015	[Phenyl-UL-14C] AE F160459: Adsorption/desorption in five different soils Report No: AS156 Date: 2011-04-11 **...Amended: 2015-02-19** GLP: yes, unpublished	N	Bayer CropScience
KCP 9.1.4	Hein W.	2009	[Phenyl-UL-14C] AE F160460: Adsorption/desorption in five different soils Report No: AS122 Rheinland-Pfalz AgroScience GmbH, Neustadt, GermanyBayer CropScience, GLP: yes,	N	Bayer CropScience

Data point	Author(s)	Year	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** **Published or not**	Verte-brate study Y/N	Owner
			unpublished		
KCP 9.1.4	Telscher, M.	2014a	KOC evaluation of the soil metabolite of mesosulfuron-methyl AE F140584 (BCS-AU66443) Report No.: EnSa-14-0627 Bayer CropScience GLP: yes, unpublished	N	Bayer CropScience
KCP 9.1.4	Menke, U.	2008	AE F147447: Adsorption to soils Report No.: MEF-08/463, Bayer CropScience GLP: yes, unpublished	N	Bayer CropScience
KCP 9.1.2	Traub, M	2015	Determination of the adsorption/desorption behaviour of mesosulfuron-methyl-des-methyl-guanidine (BCSCV14885) in four soils eurofins-GAB GmbH, Niefern-Oeschelbronn, Germany Bayer CropScience, Report No.: S12-00016 Date: 2013-06-27 **...Amended: 2015-02-18** GLP: yes, unpublished	N	Bayer CropScience
KCP 9.1.4.2	Schnoeder F.	2000a	Lysimeter study according to BBA guideline IV, 4-3, 1990 Code: AE F130060-(pyrimidyl-2-14C) Report No.: C009987 Covance Laboratories GmbH, Muenster, Germany Bayer CropScience GLP: yes, unpublished	N	Bayer CropScience
KCP 9.1.4.2	Weller, O.; Ries, S.	2000	Mass spectroscopic investigation of two lysimeter leachate samples Mesosulfuron (proposed ISO) Code: AE F130060 Report No.: C008159 Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience	N	Bayer CropScience

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Verte-brate study Y/N	Owner
			GLP: yes, unpublished		
KCP 9.1.4.2	Schnoeder F.	2000b	Lysimeter study (autumn application) according to BBA guideline IV, 4-3 (1990) Code: AE F130060-(pyprimidyl-14C) Report No.: C010044, Covance Laboratories GmbH, Muenster, GermanyBayer CropScience, GLP/GEP: yes, unpublished	N	Bayer CropScience
KCP 9.2, KCP 9.2.1, KCP 9.2.2, KCP 9.2.3	Steinfuehrer T.; Zumdick, A.	2000	Aerobic degradation in two water/sediment - systems at 20 degrees C 14C-AE F130060 Code: AE F130060 Report No.: C009416 Aventis CropScience GmbH, Frankfurt am Main, Germany Bayer CropScience, GLP: yes, unpublished	N	Bayer CropScien ce

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	Verte-brate study 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	Verte-brate study Y/N	Owner

Appendix 2 Detailed evaluation of the new Annex II studies

Not relevant.