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# Version history

Date	Data points containing amendments or additions      Data points containing amendments or additions	Document identifier of
		version number
	<i>i</i> ∼a.	
Changes wil	l be presented according to the approach to showing revisions a	nd version history as outdined in
ANCO/1018	30/2013 Chapter 4 How to revise an Assessment Report	
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### FATE AND BEHAVIOUR IN THE ENVIRONMENT CP9

This document contains updated calculations for the predicted environmental concentrations of foramsulfuron and its metabolites in soil and water. The reports submitted for the first Earopean® approval are not included in this document or in the baseline dossier as they are Aculations which were not performed to the current standards and thus are not considered to be relevant.

### Use pattern considered in the environmental exposure and risk assessment

Table 9\_ 1. Intended annlication nattern

Table 3- 1.	інісписи аррп	cation pattern	م) ا	٠٠) '	<b>%</b> 1 /	
Crop	Timing of	Number of	Applica@on	Maximum	Maximum appli	eation Pate,
	application	applications	interval	label rate	Øindividual treatn	nent (ranges)
	(range)		<b>Q</b>	(range) 🥄	Y YIZ/IIA	
			﴿ [days] °			Isoxadifen-
						ethyl
Maize	BBCH	1 2	~ .	v Q	©60 °	60 0
Iviaize	12-18			\$ <sup>2.6</sup> A		
Maize	BBCH	2,0		13,0	300	J 30
Maize	12-18	2		1.3		90

Definition of the residue for cisk assessment

Justification for the residue definition for risk assessment is provided in MCA

Definition of the residue for risk assessment Table 9- 2

1 abie 9- 2	Delimition of the	ited estable for them assessment $\forall x \in \mathcal{C}$
Compartment		Compound / Code
Soil		Foramsufferon AE F092944 AE F092944 AE F153395
Groundwater		Foramsuffaron  AE F092944  AE F153745  Foramsuffaron  AE F092944  AE F130619  AE F153745
Surface water		Compound / Code  Foramsuffaron  AE F092944  AE F153 55  Foramsulfuron  AE F992944  AE F130619  AE F130619  AE F153 45  Foramsulfuron  AE F092944  AE F130619  AE F153 75  AE 0338795  AE F099095  4-Amino-N-methylbenzamide  4-Foramsulfuron sulfamic acid



### **CP 9.1** Fate and behaviour in soil

Laboratory studies assessing the fate and behaviour of the preparation in soil have not been performed. Fate and behaviour of foramsulfuron in soil were assessed in the MCA document (Section 75) of the current renewal dossier based on the application of the active substance in laboratory studies. Outdoor studies with the application of a formulation were considered as supportive information. The endroints derived from studies with the active substance are considered as appropriate to assess the exposure of foramsulfuron after application of the formulation FSN+LOF OD 45 (22,5+22.5).

derived from stu	Rate of degradation in soil
ioramsuituron a	tter application of the formulation FSN+IDF OD 45 (22)+22.5).
CP 9.1.1	Rate of degradation in soil
	Rate of degradation in soil  Laboratory studies  tudies with the formulation have not been performed Please refer to Document  Field studies  Soil dissipation studies  Soil accumulation studies
Experimental st	tudies with the formulation have not been performed. Please refer to Document
MCA7.1.2.1.	
CP 9.1.1.2	Field studies  Soil dissination studies
CP 9.1.1.2.1	Field studies  Soil dissipation studies  Document MCA 7.1.2.2.  Mobility in the soil  Laboratory studies  didies with the formulation have not been performed. Please refer to Document MCA  Lysineter studies  Document MCA 7.1.4.2.  Field leaching studies  Please refer to Document MCA  Lysineter studies  Document MCA 7.1.4.2.  Field leaching studies  Please refer to Document MCA  Lysineter studies  Document MCA 7.1.4.2.  Field leaching studies  Document MCA 7.1.4.2.  Field seaching studies  D
Please refer to Γ	Document MCA 7. \$\frac{1}{2} \cdot 2 \
CP 9.1.1.2.2	Soil accumulation studies 4 7 4 4 4
Please refer to I	Document MCA 7 1 2 2 8 8 8 8 8 8 8 8
ricuse refer to E	
CD 0 1 2	Molester in the cast
C1 9.1.2	
CP 9.1.2.1	Laboratory studies
Experimental	udies with the formulation have not been performed. Please refer to Document MCA
7.1.3.	
CP 9.1.2.2	Lysimeter studies
Please refer to I	Document MCA A. 1.4.2. O
CD 0 1 2 3	Field Pooling tuding & & &
-1 9.1.2.3	
Please refer to C	CP 9.Y.
CP 9.1.3 <sup>®</sup>	Estimation of concentrations in Soil
_ 🖑	
Predicted envir	onmental concentrations in Soil (PECs)
Report:	· 2013·M-456836-01
Title:	FS PECsoil EUR - Use in maize in Europe
Report & S:	Firsa-13-0395
Document No	M-456836-01-1
Guidelines	EU Commission, 2000, Guidance Document on Persistence in Soil (Working
	(A) D (A) 0100/A/107 0
	2 amency) > 100/ + 2/> 1 e + 10
	Document), 9188/VI/97 rev.8 FOCUS 1997, Soil persistence models and EU registration FOCUS, 2002, Generic Guidance for FOCUS Groundwater Scenarios, Version 1.1

### **Methods and Materials:**

The predicted environmental concentrations in soil (PEC<sub>soil</sub>) of foramsulfuron and its metabolite were estimated using a simple first tier approach (Excel sheet). A bulk density of 1.5 kg/L and a soft mixing depth of 5 cm were used as recommended by FOCUS (1997) and EU Commission (1995, 2000). Detailed application data used for simulation of PEC<sub>soil</sub> were compiled in Table 9.1.3-1.

Table 9.1.3-1: Application pattern used for PEC<sub>soil</sub> calculations of foraresulfuron

Table 7.1.3-1. Application pattern used for The soil calculations of for ansaumition							
		Apprication (			∨Amo@nt reaching &		
Individual	FOCUS Crop	Rate	Interval	Plan <b>t</b> ℚ″	BBCH	the soil perseason	
Cron U	Used for	per Season	00'	Interception @	Stage	、 ○ application	
F	Interception	[g a.s. /ha]	[days]			g a.s./ha	
Maize	maize	1 × 60		25 6	<b>%</b> 2-18 <b>%</b>	1 × 45, 0°	
Maize	maize	2 × 30		2 25 25	1268	2 \$22.5	

### **Substance Specific Parameters:**

PEC<sub>soil</sub> calculations were based on the maximum DT of laboratory studies, normalized to 20°C and field capacity according to FOCHS (2009). Further compound specific inpurparameters are summarized below.

Table 9.1.3-2: Input parameters for PEC<sub>soil</sub> for forange ulfuron and its metabolites

Compound	D(C)50 1)	Max, occurrence	Molar mass	Motar mass correction	Metabolite	application on soil
, a	©[days}		j mag [g√mol] ∂	$\mathcal{O}_{n}$	60 g a.s./ha	30 g a.s./ha
Foramsulfuron 💍	8/2	√ <sub>6</sub> 100 √	432.49 S	Øi "S	(45)	(22.5)
AE F130612	\$.7 C	29.1 ¢	<b>₹</b> 424. <b>4</b> 4	0.938	12.28	6.14
AE F153745	₹3.68 €	7.8	271 <b>9</b> 0	O 0.59%	2.1	1.05
AE F092 <b>9</b> 44	147.6	17.	155.16 @	0.20429	2.75	1.37

<sup>1)</sup> Maximum DT<sub>50</sub> of laboratory studies normalized to 20°C and field apacity - for details please refer to CA 7.1.2.7 and CA 7.1.2.2

### **Findings:**

The maximum PEC<sub>so</sub> values for formsulturon and its metabolites are summarised in the following table. The maximum, short term and long-term PEC values and the time weighted average values (TWAC<sub>soi</sub>) of foramsulturon and its metabolites are provided thereafter for 1 x 60 g a.s./ha and 2 x 30 g a.s./ha

Table 9.1.3-3: Maximum PEC, oil of for an sulfurion and its metabolite for the uses assessed

Ž.

Use pattern	Foramsulfmon (mg/kg)	AE F130619 [mg/kg]	AE F153745 [mg/kg]	AE F092944 [mg/kg]
	0.060	0.016	0.003	0.004
Maize, 2 × 30 a.s./ha	0.058	0.015	0.002	0.004



Table 9.1.3-4: PEC<sub>soil</sub> (actual) and TWAC<sub>soil</sub> of foramsulfuron

		Foramsulfuron				
	Time	1 x 60 g	g a.s./ha	2 x 30	g a.s./ha	
	[days]	<b>PEC</b> <sub>soil</sub>	TWACsoil	PEC <sub>soil</sub>	TWAC	
		[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	
Initial	0	0.060		0.058 <sup>©</sup>	~ ~~	
	1	0.059	0.060	0.038	00.058	
Short term	2	0.059	<b>Q</b> : <b>Q</b> 59	0,057	√° 0.03% €	
	4	0.058	<b>1</b> 059	<b>Z</b> 0.056	© 0037 ©	
	7	0.057	0.058	© 0.055 <sub>€</sub>	<b>0</b> .057	
	14	0.053			₩0.055 <sup>©</sup>	
	21	0.050	0.055	Ø.049		
Long term	28	0.047©	0.053 0.051	0.046	Q.952 ~	
	42	0.042	©°0.051	< 0.04¶	>>0.049∜°	
	50	0.039		<b>2</b> 20038	(L) 0.048	
	100	<b>∠</b> 0.026 🍣	<b>@</b> 040 Q	0.025	0.009	

Table 9.1.3-5: PECsoil (actual) and TWACsoil of AE F430619

	(	Q4 87,	AE F1	Ø0619√ √ §	
	Time	1 x 60 g	g a.s./ha	© 2x 30 g	a.s./ha
	[days]	PFC 40	TWACsoil	PE Soil	L VV A C soil
			Øng/kgl	[mg/kg]	[mg/kg]
Initial	0	<b>Q</b> .016	L 4	<b>∞</b> 0.015 ⊘	
	1 0	②.016 △ 0.016	0.016	\$\int 0.015\int \( \text{\tin}}\ext{\tetx{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}}\text{\text{\text{\text{\text{\text{\text{\text{\text{\tex{\tex	0.015
Short term	2	<u>1</u> 0.016	0.016	0.40)4	0.015
	4		0,0.01%		0.014
		© 014 ©	Ø 0. <b>Q</b> 15	©0.012√√	0.014
	\$14	, Ø.011°	90.013 90.013	£ 0.0 <b>}</b> 9	0.012
	21	L 0.009 ~	<b>9</b> .013	<b>O</b> 9:908	0.011
Long term	280	_ 0.008 LO	(*************************************	0.007	0.011
Long term	<b>₽</b> 2 ≪	V 28	, © 0,000 °	0.005	0.009
	50	√° 0.004 √	) 0.009 <sub>Q1</sub>	0.004	0.008
	1000	0.004	©0.00 <b>6</b> ©	0.001	0.005

Table 9.1.3-6: PLC soil (actual) and TWAC soil of AE F1 3745

1 able 9.1.3-6: Plet soil (actual) and 1 WAC soil 9 (AL F130/45)								
	AE F153745    Come   1 Coo g.a.g./ha   2 x 30 g a.s./ha							
	Jûme J	1 D60 g	g a 9./ha 💯	2 x 30 g	a.s./ha			
	davs LO	PEC <sub>son</sub> (	TWACsoil	PECsoil	TWACsoil			
		/ mg/kg 🛴 🛠	wg/kg]	[mg/kg]	[mg/kg]			
Initial &	Q Q	0.003		0.002				
√ n	SÍ A	Ø.002	0.003	0.001	0.002			
Short term		y 0.00Q, ~~	0.002	0.001	0.001			
	4 ° 4 ° 6	0, <b>9</b> 91 .	0.002	< 0.001	0.001			
l Ç	. 47 D	<b>9</b> .001 <b>%</b>	0.002	< 0.001	< 0.001			
Q'	<b>√14</b> €	°≥0.00	< 0.001	< 0.001	< 0.001			
	21 0 2	√ <0.0 <del>0</del>	< 0.001	< 0.001	< 0.001			
Long term Q	ž 28 6	< 0.001	< 0.001	< 0.001	< 0.001			
	242	< 0.001	< 0.001	< 0.001	< 0.001			
	50	< 0.001	< 0.001	< 0.001	< 0.001			
Long term	1000	< 0.001	< 0.001	< 0.001	< 0.001			

Table 9.1.3-7: PEC<sub>soil</sub> (actual) and TWAC<sub>soil</sub> of AE F092944

			AE FO	092944	Q
	Time	1 x 60	g a.s./ha	2 x 30 g a.s./ha	
	[days]	PECsoil	TWACsoil	PECsoil >>	TWACO
		[mg/kg]	[mg/kg]	PEC <sub>soil</sub> [mg/kg]	[mg/kg]
Initial	0	0.004		0.004 <sup>*©</sup> *	~ °×
	1	0.004	0.004	0.004	0.004
Short term	2	0.004	0.004	Qr.004	√ 0.00¥ C
	4	0.004	0.00	<b>Ø</b> .004	© 0€04 J©
	7	0.004	0,004	0.003	0.004
	14	0.003	<sub>4</sub> <b>@</b> .004	0.003	~~0.00 <b>3</b> °
	21	0.003	0.003	<b>Q</b> 003	0.003
Long term	28	0.003	0.003	0.003	,0,003 <del>,</del> 00
	42	0.003	© 0.003		<b>₹</b> 0.003 <b>€</b>
	50	0.003	0 003	Q.0003 8	0.003
	100	0.002	0.00 <b>%</b>	0.002	0 0003

### Potential accumulation in soil:

The accumulation potential of foransulfinon and its metabolites AB F130619, SE F153745 and AE F092944 after long term use was also assessed, employing a larger soil depth for the calculation of the background concentration in cases where thage is relevant. The esults are presented below for both a standard mixing depth of 5 cm (Table 9.0.3-8) and a non-standard mixing depth of 20 cm (Table 9.1.3-9).

Table 9.1.3-8: PEC for foremsulfuron and its metabolites for the uses assessed, taking the effect of accumulation into account standard mixing depth of 5 cm – non-tillage situation)

Use Pattern	PECSOIL	Foramsulfuron [mg/kg]	AE 130619 [mg/kg]	AE <b>F</b> (\$3745 [mg/kg]	AE F092944 [mg/kg]
Maize	pateau 4	0.003	<pre> &lt; 0.001</pre>	<0.001	< 0.001
Maize 1 × 60 g a.s./ha	tota	0.00	0.016	0.003	0.004
Maize	plateau	\$ 0,003 \$\tag{\text{\$\circ}}	<0.001	< 0.001	< 0.001
2 × 30 g a.s./ha	Stotal*	0.061	© 0015	0.002	0.004

<sup>\*</sup> total = plateau (background concentration after multi-pear use) + max. PEC<sub>soil</sub> (see Table 9.1.3-3)

Table 9.1.3 9: PEC<sub>soil</sub> of foram sulfuron and its metabolites for the uses assessed, taking the effect of accumulation into account (non-standard mixing depth of 20 cm – tillage considered)

Use Pattern	mg/kg)	AE F130619 [mg/kg]	AE F153745 [mg/kg]	AE F092944 [mg/kg]
Maize 🗸	plateau 🗸 🕬 1 🖑	< 0.001	< 0.001	< 0.001
1 × 60 g a.s. Pa	Jotal* 0.061	0.016	0.003	0.004
Male (	plate a <0.001	< 0.001	< 0.001	< 0.001
2 × 30 g a.s./kg	150al* 0.059	0.015	0.002	0.004

<sup>\*</sup> Total = plateau (background concentration after multi-year use) + max. PEC<sub>soil</sub> (see Table 9.1.3-3)

Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

### **CP 9.2** Fate and behaviour in water and sediment

Laboratory studies assessing the fate and behaviour of the preparation in water and sediment love not been performed. The fate and behaviour of foramsulfuron in aquatic environment were assessed in the MCA document of the current review dossier, based on laboratory studies with application of the active substance. The endpoints derived from these studies are considered appropriate to assess the exposure of foramsulfuron after application of the formulation FSN-DF OD 45 (22.5+22.5).

### **CP 9.2.1** Aerobic mineralisation in surface water

Experimental studies with the formulation have not been performed. Please refer to Document McA 7.2.2.2.

### CP 9.2.2 Water/sediment study

Experimental studies with the formulation have not been performed. Please refer to Document MCA 7.2.2.3.

### CP 9.2.3 Irradiated water/sediment study

Experimental studies with the formulation have not been performed. Please refer to Document MCA 7.2.2.4.

# CP 9.2.4 Estimation of concentrations in groundwater

# CP 9.2.4.1 Calculation of concentrations in groundwater

This data requirement was addressed in the Dossier Submitted and evaluated for the Annex I inclusion of foramsulfuron, as Published in the corresponding Monograph and its amendments, written by Germany, as RMS (April 01, 2001).

Following latest guidance on FECgw modeling and considering compound related input parameters from new experimental studies and kinetic evaluations new PECgw values have been calculated therefore supersecting the previous data.

## Predicted environmental concentrations in groundwater (PECGW)

Es .

Report	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
Title;	FSNAPECgw EU - Predicted environmental concentrations in groundwater recharge
	based on model Focus Pean and Focus Pelmo - Use in maize in Europe
Report No:	EnSa-13-0336 @
Document No.	<u>M</u> -45 <b>2</b> 495-0 <b>1</b> ♥
Guidelines	FOCUS 2000, SANCO/321/2000 rev. 2
	FOCUS 2009, SANCO/13144/2010 v. 1
	FOCUS 2012, Generic Guidance for Tier 1 FOCUS Groundwater Assessments, v.
	2.1
GLP/GEP®	no <sup>®</sup>



Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

Materials and Methods:

The predicted environmental concentrations in groundwater (PEC<sub>gw</sub>) for foramsulfuron and its metabolites were calculated using the size-lation. metabolites were calculated using the simulation model FOCUS PEARL (version 4.4.4) and FOCUS PELMO (version 4.4.3). Detailed application data used for simulation of PEC were compiled in Table 9.2.4.1-1.

Table 9.2.4.1-1: Application pattern used for PEC<sub>gw</sub> calculations

	EOCUS Cron		Application			
Individual Crop	FOCUS Crop Used for	Rate per Season	Interval	Plant & Interception	BBCH Stage	the Sod per Season  Lapplication
- 1	Interception	[g a.s./ha]	[days]			
Maize	maize	1 × 60	- Q		<b>*2</b> -18	** ** 45***
Maize	maize	2 × 30	. %	© 2 × 25	012-18	2 × 2 × 2 · 5

Application dates for the simulation rules were defined following the crop event dates of the respective Application dates for the simulation rules were defined following the crop event dates of decrop and scenario (Table 9.2.4.1-29 as given by FOCUS (2009). Crop interception was account according to the BBCH growth stage, as recommended by FOCUS (2012). crop and scenario (Table 9.2.4.1- 29 as given by FOCDS (2009). Crop interception was caken into



Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

Table 9.2.4.1- 2: First application dates simulation runs  Individual crop	and related information	for foramsulturon as t	used for the
Individual crop	Maize	Maize	
Repeat Interval for App. Events	Every Year	EveryYear	4 2
Application Technique	Spray	Spray	
Absolute / Relative to	Emergence	Entergence O	
Scenario	I <sup>st</sup> App. Dage (Julian dage) Offset	(Julian day)	
Chateaudun	06 May 7 (126)	06 May (126)	
Repeat Interval for App. Events Application Technique Absolute / Relative to  Scenario  Chateaudun  Hamburg  Jokioinen  Kremsmuenster  Okehampton  Piacenza  Porto Swilla  Thiva  Substance specific and model related input	5 5 10 May 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5 May (130)	
Jokioinen			
Kremsmuenster	70 May 70 May 70 (130)	10 May (730)	
Okehampton S	30 May 4 6	30 May (150)	
Piacenza 7 4 9	20 May 5 40) 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	20 Mag	
Porto Santia Constitution of the santia constitu	06 May (126) 5 5 12 May	96 May (126) 5	
Thiva	(76) (5) (25) April (9)	(71) 5 25 Apr	
	5° 5° (115) 5° 5° 5° 5° 5° 5° 5° 5° 5° 5° 5° 5° 5°	(115)	
Substance specific and model related input	Parameters for PECgw	modelling are summaris	sed in Table
Kremsmuenster  Okehampton  Piacenza  Porto  Sevilla  Thiva  Substance specific and model related input  9.2.4.1-3.			

Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

Table 9.2.4.1- 3: Substance specific and model related input parameter for PECgw calculation of foramsulfuron and its metabolites (model parameters not listed are kept as default)

Parameter	Unit	Foramsulfuron	AE F130619	AE F153795	AE F002944
Common					
Molar mass	[g/mol]	452.5	424.4	271.3	\$155.2\$ <sup>y</sup>
Water solubility	[mg/L]	3293	35.5	×5830	54840 4
Vapour Pressure	[Pa]	4.20E-11	5. <b>©</b> 0E-13	€3.47E-08	3.72 2-02
Freundlich Exponent 1)	[-]	0.870	0.930	Q 0.970 @	f ∷%670 ≪ ≀ I
Plant uptake factor	[-]	0.0	0.0	0.0	0.0
Walker Exponent	[-]	0.7	0.7	0.7 €	۷. س الا
PEARL parameters		000	,,	0.7	O' & V
Substance Code	[-]	foram,	。F61 <b>2</b> 0°	l 🌱 F7245 🌯 Š	. <b>₹</b> 944 <b>/</b> \$
DT <sub>50</sub> <sup>2)</sup>	[days]	13.5 65.4	2/3 A 63.4 O	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	25.9
Molar activ. energie	[kJ/mol]	65 1 %	n 691 408	© 00	€ 65. A L.
Kom 3)	[mL/g]	40,100	36.6	<u>⊿</u> 27 <b>.</b> €	$\bigcirc$ and $\bigcirc$ $\bigcirc$
Kf	[mL/g]	~~	~ . ° °		\$50.0 - \$7
PELMO parameters					Q O
Substance Code	[-]		XX1 O	BIS	<b>E</b> l
Rate Constant 2)	[1/day]	0.06980	0.30137	B1 \$\infty 0.81\infty 47	©1 .0.92676 2.58
Q10	[-]	<sup>*</sup>	1 0° 2 5000° .		<sup>2</sup> 2.58
Koc <sup>3)</sup>	[mL/g	\$\frac{\alpha}{22.58}\text{\alpha}\text{69.7}	1. V ~ X // (1)	48.0	621.0
Degradation fraction fro	m → Ho (	0.92 foram -> <b>F</b> 61	10		
(FOCUS PEARL)		0.92 foram = 7574	45, ,		)
	» A	0.22 forang > F94			
Degradation rate from	y to S	0.047 Active Sup	stance > A1	( Y ) ( Y )	
(FOCUS PELMO)	'U' 🕺	0.011 Active Subs	starrce -> B.1	O' &	
		0.041 Active Subs	stance ->001	Ç Q	
	\ \ \	0.301 A1 >> <br< td=""><td><sup>™</sup>CO2 <sup>™</sup></td><td></td><td></td></br<>	<sup>™</sup> CO2 <sup>™</sup>		
(FOCUS PELMO)	, O	@.815% -> <	W 7/	@ n	
	<b>*</b>	0.0000000000000000000000000000000000000	/C/Q2 U	\$\tilde{\	

- 1) arithmetic mean of 1/n values from different soils (For detailed values please refer to CA 7.1.3.1 and CA 7.1.3
- 2) geometric mean of normalised DT in aerobic soft ander laboratory conditions (For detailed values please refer to CA 7.1.2 and CA 7.1.22.)
- 3) geometric mean of Koc values from different soils. The Koc values were converted into Kom values with the standard conversion factor of 1.724. For detailed values places refer to CA 7.1.3.1 and CA 7.1.3.2.)

PEC<sub>gw</sub> were evaluated as the 80<sup>th</sup> percentile of the mean annual leachate concentration at 1 m soil depth.

PEC<sub>gw</sub> values for for mosultaron and its merabolites are given in the following tables.



Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

Table 9.2.4.1-4: Maize: PECgw (PEARL and PELMO) of foramsulfuron

	1 x 60	1 x 60 g a.s./ha		g a.s./ha
	PEARL	PELMO	PEARL S	PELMO 🔊
<b>FOCUS Scenario</b>	$PEC_{gw}$	PECgw	PEC <sub>gw</sub> "O"	PEC <sub>gw</sub>
	[µg/L]	[µg/L]	[μg/ <b>Ł</b> ],	μg/L
Châteaudun	< 0.001	<0.001	<0001	<0.00h
Hamburg	< 0.001	<0.004	<b>Ø</b> .001	© <00001 , ©
Kremsmuenster	< 0.001	<0.001	<b>0.001 √</b>	Ø.001 ©
Okehampton	< 0.001	<,020001	<0.001	<b>₹0.00</b>
Piacenza	< 0.001	<b>20</b> .001	< <b>0</b> 0001	\$\sqrt{0.001} \times
Porto	< 0.001	©<0.001	Ø.001	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Sevilla	< 0.001	( <0.00) 3°	<0.0Q JO	Ď °≽ŏ.001∜°
Thiva	< 0.001	O' 5001	~ <0.001 ~	<0.001

Table 9.2.4.1- 5: Maize: PECgw (PEARL and PELMO) of AE F130619

	Q. /		1 <b>3961</b> 9 🐥 🔎	
	Q x 60	: a.s./ 1/4a/ × / / /		g acc./ha 🌣
	PEAORL	ÞELMO 🔊	PEARLS (	PEŁMO
FOCUS Scenario	₽EČ <sub>gw</sub> √	PEC gw	PEGW O	<b>PECgw</b>
	~(μg/L)	[pog/L] 🎺	[µg/L] O	[μg/L]
Châteaudun	<0.001	<0.001	√ _ <b>∞</b> Ø.001 ፟∅	< 0.001
Hamburg	© <0001	<0.001	√×0.00€ «	<0.001
Kremsmuenster	<b>₹</b> 0.001	Ø < <b>Ø</b> Ø01 Ø	<0.001	< 0.001
Okehampton 👟	\$<0.0 <b>0</b> \$	©0.001~	0, 80,001 ×.	< 0.001
Piacenza	<b>0</b> <0,091	\$<0.0 <b>0</b> \psi	©0.001 <sup>©</sup>	< 0.001
Porto	<0.001 √ ×	<0.001	<0.0 <b>∅</b> }	< 0.001
Sevilla	√\$0.00 <u>1</u>	\$0.001		< 0.001
Thiva O	<0.00)	× × 0.00%	< 0.001	< 0.001

Table 9.2.4.1-6: Maize: PECgw REARL and PELMOr of AE N 53745

	Degweet EAR Sand TELIVO	AE F153745	
FOCUS Scenario	1 x 60 g a.s./ha		30 g a.s./ha
	POÄRL PE	PEARL ECgw g/L  2000  PEARL PECgw μg/L  2000  2000	PELMO
FOCUS Scenario	PEC <sub>99</sub>	EC <sub>gw</sub> PEC <sub>gw</sub>	$PEC_{gw}$
	PEC <sub>B</sub> O P	$[\mu g/L]^{\mathscr{O}}$ [ $\mu g/L$ ]	[µg/L]
Châteaudun		1.DQ/1   \QU.UU1	< 0.001
Hamburg	\$0.001	< 0.001	< 0.001
Kremsmenster Okehampton	1 40.001 45 30	0.001 <0.001	< 0.001
Okehampton	<u> </u>	0.001 <0.001	< 0.001
Piaconza	[\$*	0.001 <0.001	< 0.001
I PORTO	1	0.001 <0.001	< 0.001
Sevilla Sevilla	\$\tilde{\mathcal{U}} < 0.9\tilde{\mathcal{Q}}  < 0	0.001 <0.001	< 0.001
Thiva S	© <0.001	0.001 <0.001	< 0.001
Thiva Thiva	2 < 0.000 < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) < (0.000 ) <		



Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

Table 9.2.4.1-7: Maize: PECgw (PEARL and PELMO) of AE F092944

	1 x 60	1 x 60 g a.s./ha		g a.s./ha
	PEARL	PELMO	PEARL &	PELMO 🔊
<b>FOCUS Scenario</b>	PECgw	PECgw	PECgw	PEC <sub>gw</sub>
	[µg/L]	[µg/L]	[μg/ <b>]≟</b>	μg/L
Châteaudun	< 0.001	<0.001	<0.001	% <0,00x
Hamburg	< 0.001	<0.004	<b>%</b> .001	© <00001 , ©
Kremsmuenster	< 0.001	< 0.001	<b>0.001</b> €	Ø.001 ×
Okehampton	< 0.001	<000001	<0.001	<b>₹</b> 0.00 <b>,</b> 0°
Piacenza	< 0.001	<b>20</b> :001	< <b>0</b> 0001	<0.00Ĭ √√
Porto	< 0.001	©<0.001	y \$0.001	\ \ \$0,001
Sevilla	< 0.001	<0.000 1 €	\$\leq 0.0\text{Q}^{\text{T}} \qquad \qqqqq \qqqqq \qqqq \qqqqq \qqqq \qqq \qqqq \qqq \qqqq \qqq \qqqq \qqq \qqqq \qqq \qqqq \qqq \qqqq \qqq \qqqq \qqq \qqqq \qqq \qqqq \qqq \qqqq \qqq	ϰ %0.001∜°
Thiva	< 0.001	O 50001	~ <0.001 ~	<0.001

### **Conclusion:**

There are no concerns for groundwater For for the representative formulation.

### **CP 9.2.4.2** Additional fiel@tests

behaviour of formsulfuson metabolites are not Additional field tests to assess the leaching considered necessary.

### Estimation of concentrations in surface water and sediment **CP 9.2.5**

This data requirement was addressed in the Dossier, submitted and evaluated for the Annex I inclusion of foramsulfurous as published in the corresponding Monograph and its amendments written by Germany as RAS (April 01, 2001).

New PECs values, following latest gurdance on PECsw modeling and considering compound related input parameters from new experimental studies and kinetic evaluations have been calculated, therefore superseding the previous data.

# Predicted enveronmental concentrations in surface water (PECsw)

# Predicted environmental concentrations in sediment (PEC<sub>SED</sub>)

Report:	;2013;M-458837-02; Amended: 2013-09-
Kepgri.	
Title:	Foramsurfuron (FSN) and metabolites: PECsw, sed FOCUS EUR - Use in maize in
	Europ Forgas Sulfuro (AE F130360) AE F130619, AE F092944, AE F153745, AE
Title:	0338995, AE F099095 - Foramsulfuron-4-amino-N-methylbenzamide -
	F@msulftron-4-formylmido-N-methylbenzamide -
	Foramsa furon-sulfamic acid
Report No:	EnSg-Q3-0365
Document o:	M-438837-02-1
Quidelines:	F©ČUS 2003, SANCO/4802/2001 rev 2
	FOCUS 2000, SANCO/321/2000/rev. 2
U	FOCUS 2007, SANCO/10422/2005 v. 2.0
GLP/GEP:	no

Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

### **Materials and Methods:**

Predicted environmental concentrations in surface water and sediment PEC<sub>sw</sub> and PEC<sub>sw</sub> of foramsulfuron and its metabolites AE F130619, AE F092944, AE F153745 AE 0338795 AE F099095, 4-amino-N-methylbenzamide, 4-formamido-N-methylbenzamide and foramsulfuron sulfame acid have been calculated for the use in maize in Europe.

At FOCUS step 2 the application period was set to Warch to May and calculations considered the use in Northern and Southern Europe. Details of the opplication pattern used in the Step 2 calculations are summarised in Table 9.2.5-1.

Table 9.2.5-1: Application pattern used for PECs, Calculations (for FOGUS step) &2)

Individual Crop	FOCUS Crop Used for Interception	Rate per Season	Interval	cation Plant Plant Thereoption	Growth	
	merception	ga.s./hav			S.	🦻 [g:á∡š. /ha]
Maize	Maize (arable crops) ≥	<b>№</b>		Minmal crop	12-180	1 × 45.0
Maize	Maize ≪ (arable crops)	\$2 × 30 \$\tilde{\tiide{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{	\$7 a	Minimal crop cover (25%)	12/218	2 × 22.5

At FOCUS step 3, actual apptication dates were determined by the PAT (pestivide application timer) included within SWASH. Details of the parameters used in the Step 9 calculations are summarised in Table 9.2.5-2.



Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

**Table 9.2.5- 2:** Application dates of foramsulfuron for the FOCUS Step 3 calculations

(Emg. sta	nds for the emergence date)	
Parameter	Maize	Maize
1 al allietei	1 x 60 g/ha	🕉 x 30 g/ha 🗸 🗳
PAT start date		
rel./absolute	Emg., 0 days	Emg., 0 days
Appl. method	ground spray	ground gray y
(appl. type)	(CAM 2)	(CAM 2)
No of appl.	1 30"	
PAT window range	30	Qar. Range
Appl. interval	1, , ,	
Application	PAT Start Date	PAT Start Date
Details	(Julian Day)	(Julian Day)
D3 (1st)	05-May 04 May	05 OS Vay 5 404-May
D4 (1st)	(125) 30-May 30-May	9 (125)
D4 (13t)		(189) 06-Jun
D5 (1st)	10-May VI-May	10-May 11-May 27-May
D6 (1st)	(\$30)	(130) 27-May 20 Opr 23-Apr
2	20-Apr 23-Apr (110)	(110) 6 03-May
R1 (1st)	03 May 03-May	08-May (123) 15-May
R2 (1st)	(110) 03 May 0523) 01-May 01-May	OT-May 07-May
		(121) 20-May
R3 (1st)	Od-May 18 May	©01-May 18-May
	(1210)	(121) 01-Jun
R4 (1st)	10-Apr \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	10-Apr 10-Apr
	01-May 18-May 18-May 10-Apr 10-Apr 10-Apr	(100) 20-Apr
Compound specific injourt 9.2.5-4) and FOCUS Step	data Para commercial hatery factory	TS Steps 1-2 (Table 9.2.5- 3 and Table

Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

Table 9.2.5- 3: Substance parameters used for foramsulfuron and its metabolites at Steps 1-2 level

Parameter	Unit	Foramsulfuron	AE F130619	AE F092944	AE F153745	AE 0338795
Molar Mass	g/mol	452.49	424.44	155.16	2 <b>7</b> 7.3	48,8.42
Water Solubility	mg/L	3293	35.5	5484	<b>®</b> 830	200000
Koc	mL/g	69.7 <sup>1)</sup>	63.2 1)	621 1)	∡ 48 ¹)	17.65
Degradation				ا. م		
Soil	days	$13.5^{3}$	2.3 3)	25.9 <sup>3)</sup> Ø	0.9 <sup>3)</sup>	10000 4) D
Total System	days	32.9 <sup>5)</sup>	15.7 5)	110 <sup>5)</sup> Q	72.1 <sup>5)</sup> <b>©</b>	\$65.4 5 V
Water	days	32.9 <sup>5)</sup>	15.7 5	110	72.1	Q 65.40 V
Sediment	days	32.9 <sup>5)</sup>	15.⊉	11 <b>©</b>	° 72 🛵	( 65Å <sup>(5)</sup> (
Max Occurrence			00° "	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Q', O	b V
Water / Sediment	%	100	, Y0.7 .	©26.5, Y	⊕24.6≫	23.7°°
Soil	%	100	29.1	17.8	7.80	0.001

<sup>1)</sup> Geometric mean Koc

Table 9.2.5-4: Substance parameters used for the foramsulfuron metabolites at Steps 1-2 evel

Parameter	Unit AR	4-amino-N	4-formamido N-	Foramsulfuron-
1 ai ailietei	Unit 6 F099095	methylbenzamide	methylbenzamide	🏸 sulfamic acid
Molar Mass	g/mol 498.18	15000	178.19	278.24
Water Solubility	mg/L 1000	1,000 1)	10001	1000 <sup>1)</sup>
Koc	/2001 /σ   35% (₹%)			0 1)
Degradation Soil	g/moi   Ays.18   1000   1/2   1/2   1000   1/2   1/2   1000   1/2	1000	1000 <sup>1)</sup> 4000 <sup>1)</sup>	
Soil	days 4,000 1)	1000 1	1000	1000 <sup>1)</sup>
I otal System	IQQSEVIS ⊫ IUUU~~~~		1 0 20 1)	1000 1)
Water	Fays 1000 1	\$ \$6000 1) \$\tilde{\pi}\$	1000 <sup>1</sup> )	1000 <sup>1)</sup>
Sediment©	Tays ( 1000 1) days 1000 1)	1000 PU (7)	1000 <sup>1)</sup>	1000 <sup>1)</sup>
Max Occurrence				
Water Sediment	35.2	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	18	17.6
Soil	% & 0,0001	itted in the downer for An	0.001	0.001
		itted in the doctier for Antinal of 25 June 2004.		

<sup>&</sup>lt;sup>2)</sup> Estimated by calculation using KOCWIN (USE)

<sup>3)</sup> Normalised geometric mean value

<sup>&</sup>lt;sup>4)</sup> Default value (worst case)

<sup>&</sup>lt;sup>5)</sup> Geometric mean of total system

Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

**Table 9.2.5- 5:** Substance specific and model related input parameter for PECsw calculation of foramsulfuron and metabolite at Step 3-4 level (model parameters not listed are kept a

uciauit)			
Parameter	Unit	Foramsulfuron	AE F130679
Company Code	-	AE F130360	AE F130619
SWASH Code	=	Foram2	F679
<b>General Parameters</b>		Co L	
Molar Mass	g/mol	452.5 W	© 424 A V
Water Solubility	mg/L	3293.0	353
Vapour Pressure	Pa	4.2E-12 0.0 Ø	
Plant Uptake Factor	-		
Wash-Off Factor PRZM	1/cm	Ø.5 ·	0.50
Wash-Off Factor MACRO	1/mm 🖔	\$\int_{0.05}\tilde{}\tilde{}	
Sorption			\$\tag{3}\$
Koc	mL/g 🐧 🧳	1 . Ø 7 <b>Q</b> 1	0.93
Freundlich Exponent	- 2	Q.87 <sup>2</sup>	0.93
Degradation			
Soil	days (	1350	$\sqrt{2}.3^{3}$
Form. Frac. PRZM	"molardyasis "		© 0.920Q
Form. Frac. MACRO	mass basis		1 863
Water	dayš o	32.9	15.7 <sup>4</sup> )
Sediment	days -	1000 8	Ø000 <sup>5)</sup>
Walker Exponent		Ø Ø.7 ∑	0.7
Effect of Temperature			C.
Activation Energy	J/mol 🔊 🔍	65400	65400
Exponent Exponent	√r,1r/K ≈Ψ	0095	0.095
Q10 Q 2	9-29-5	2.58	2.58

<sup>1)</sup> Geometric mean Koc (

### **Findings:**

values for Steps Cand 2 are given in the tables below for Step 1 and 2: The paximum foramsulfuron and its metabolite

Maximum PEC<sub>sw</sub> and PEC<sub>sw</sub> alues for foramsulfuron and metabolites at Step 1& 2

	FOCUS S	Forams	u@uron >	AE F	130619	AE F	AE F092944	
Usé <b>p</b> attern	scepario  🎺	<b>EE</b> Csw_	PEQed	<b>PECsw</b>	<b>PEC</b> <sub>sed</sub>	<b>PECsw</b>	<b>PEC</b> <sub>sed</sub>	
	(U	ημg/Ld	[µg/kg]	[µg/L]	[µg/kg]	[µg/L]	[µg/kg]	
Č	Step 🕽 🔊	18: <b>8</b> 5	<sub>@1</sub> 12.75	5.071	3.182	0.682	4.147	
Maize	Step 2	<b>4</b>						
1× 60 g a ha	XXEU Siôgle	<b>2</b> .713	1.842	0.255	0.155	0.099	0.601	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	S-EU Single	<sup>♥</sup> 4.948	3.368	0.481	0.298	0.189	1.156	
	Step 🐎 🛴	18.85	12.75	5.071	3.182	0.682	4.147	
Mayze S	Step 2							
Marze	N-EU Multi	2.291	1.556	0.149	0.090	0.090	0.547	
2× 30 <b>g a</b> .s./ha	S-EU Multi	4.189	2.851	0.276	0.170	0.172	1.055	
	N-EU Single	1.357	0.921	0.128	0.078	0.049	0.300	
	S-EU Single	2.474	1.684	0.241	0.149	0.094	0.578	

<sup>&</sup>lt;sup>2)</sup> Arithmetic mean 1/n (3) Normalised geometric mean value O

<sup>4)</sup> Geometric mean obtotal system

<sup>5)</sup> Default value (worst ca



Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

Table 9.2.5-7: Maximum PEC<sub>sw</sub> and PEC<sub>sed</sub> values for foramsulfuron metabolites at Step 1& 2

	FOCUS	AE F153745		AE 0338795		AE FO	099095
Use pattern	scenario	PEC <sub>sw</sub> [μg/L]	PEC <sub>sed</sub> [μg/kg]	PEC <sub>sw</sub> [μg/L]	PEC <sub>sed</sub> [μg/kg]	PEC <sub>sw</sub> [μg/L]	PEC <sub>sed</sub> O
	Step 1	0.961	0.422	0.127	<0.001	0.085	<0.001 
Maize	Step 2				~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	`~\	
1× 60 g a.s./ha	N-EU Single	0.081	0.038	<b>©</b> .127	0,021	0.08\$	(203 g)
	S-EU Single	0.087	0.041	0.127	<b>Q</b> ,021	0.085	\$\text{0.203}
	Step 1	0.961	0.422		₹0.001	ر085 €	<0.001
	Step 2		4	d	Q"	. L. V	1 °C .9
Maize	N-EU Multi	0.068	0.0340	0.107	0,018	Q 0.0 <b>6</b>	© 0.179
2× 30 g a.s./ha	S-EU Multi	0.070	0.033	。0.10 <b>%</b>	~ 018 m	<b>%</b> 066 °	(° 0.1 <b>79</b> °
	N-EU Single	0.041	<b>6</b> 019	0,063	0.010	<b>20</b> .043	0.101
	S-EU Single	0.044	0.020	<b>©</b> 63 (	0.04.8	©0.043\{ <sub>y</sub>	<b>4</b> ,101

Table 9.2.5-8: Maximum PECsw and PECsed yathes for Forams affuron metabolites and PECsed yathes for Forams affuron metabolites and PECsed yathes for Forams and P

Lice nottown	FOCUS methyllogi		no-N- mzamide	4-formyl methylbe	mido N- enzanide "	D. ""	nicacid
Use pattern	scenario	<b>₽EC</b>	PFC sed	PECSW	OPEC see	PECsw >	y PEC <sub>sed</sub>
		/ [μg/L)	ang/kg	[J@/L]	¥[μg/k@]	Hag/L	[µg/kg]
	Step 1	0.024	> <0.001°	~ <b>®</b> .043 ֱ®		0.06©	< 0.001
Maize	Step 2		a y	~		l b	
1× 60 g a.s./ha	N-EU Single	0.023	£9.001 g	0.043	×0.000	<b>Q</b> .060	< 0.001
_	S-EU Šingle	0.023	\$0.00 to	Ø43 <sub>&amp;</sub>	<0.001	<b>3</b> 0.060	< 0.001
	Step 5	<b>Q</b> .024	<0.00	~0.043°	< 0.001 ≥	0.060	< 0.001
	Step 2				O' 4	<b>†</b>	
maize	. EU Malti →	0.021	<0.001	0.038	<0.000	0.053	< 0.001
2× 30 g a.s./ha	S-EUMulti 🎖	0,021	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Øð38 <i>Q</i>	~ <0,0 <del>0</del> 1	0.053	< 0.001
	N-P Single	Ø12 6	° <0. <b>40</b> ° 1	> 0.021	<0.001	0.030	< 0.001
O <sup>r</sup>	SPŽÚ Single	0.012	≤0.001 ≥	Ç 0.020 o o o o o o o o o o o o o o o o o o	<b>2</b> 0.001	0.030	< 0.001

Step 3: The maximum PEC, and PEC, alues for relevant POCUS Step 3 scenarios are given in the tables below. Time weighted avorage concentrations are not included in this summary, because they were not used in the risk assessment.



Table 9.2.5-9: Maximum PEC<sub>sw</sub> and PEC<sub>sed</sub> of foramsulfuron and the metabolite AE F130619 for all scenarios at Step 3 following application to maize (1 x 60 g a.s./ha)

Use pattern:		Maize, 1 x 60 g a.s./ha					
Ose pattern.		Foramsulfuro	AE	F130619			
FOCUS scenario	Entry route*	PEC <sub>sw</sub> [μg/L]	PEC <sub>sed</sub> [μg/kg]	PEC <sub>sw</sub> [μg/L]	PEC <sub>sed</sub> C		
D3 (ditch)	S	0.314	0.075 🔊	0.032	0.006		
D4 (pond)	S	0.013 🐠	0.022	0.00P	0.002		
D4 (stream)	S	0.27	0.017	0.0001	<0.001		
D5 (pond)	S	0.695	0,031 %	0.002	₩ Ø.003		
D5 (stream)	S	Q,251 65°	. 20.012 × °	× × 0.001	″ 0.00%		
D6 (ditch)	S	©0.316, ©`	× 0.072	0.02	0.006		
R1 (pond)	R	△ 0.025	<b>∞</b> 0.0 <b>€</b> 7	0,004	Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø		
R1 (stream)	R §	( 1.284 )	× 9,230 🕰	<b>6</b> .081	0.013		
R2 (stream)	R 🧳	_°20,972 . ©″	\$ \$\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tiilee{\tilde{\tilde{\tilde{\tiii}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}	/\gamma 0.106\gamma	0.02		
R3 (stream)	R Q	<i>√</i> √2.225√	~~~~0.41 <del>1</del> V	O.178	0.028		
R4 (stream)	R <sub>C</sub>	2.34	√° 0.5\$0 ≈	<b>⊉</b> 0 <b>. 2</b> 00 2 00 2 00 2 00 00 00 00 00 00 00 00	<b>©</b> 041		

<sup>\*</sup> Entry route: letters S, D, and R represent to the dominant entry path spray or fit, dramage, and runoff

Table 9.2.5-10: Maximum PEC and PEC sector for am sulfuron for all scenarios at Step 3 following application to maize (2x 30 g as //ha, 2d intercal)

Use pattern: Yaize, 2x 30 g3.s./ha, 7 d interval							
Foramsulturon,  FOCUS scenario  FOCUS scenario							
FOCUS SCENATION	Entry Foute	PECsw ^ [kg/L] &	PEC <sub>sed</sub> S	Entry route	PECsw [µg/L]	PEC <sub>sed</sub> [μg/kg]	
D3 (ditch)	ov s 😂	©0.157 <sub>4</sub>	0.039	$\circ_{S}$	0.136	0.044	
D4 (pond)	S	<b>€</b> 0.00€	0.019 Q	, Şõ	0.010	0.019	
D4 (stream)		© 0. <b>13</b> 6	<b>£</b> \$009 \$\$		0.118	0.010	
D5 (pond)	S S	<sup>(2)</sup> ,0,007 &	×0.016	°~∑	0.013	0.037	
D5 (atroom)	₽″s %`	©0.126	<b>≈</b> 0.00 <b>6</b>	A S	0.117	0.017	
D6 (ditch)	<b>.</b>	0.1 <b>58</b>	© 0.037 0	S	0.138	0.050	
I R I (nond)	I &(JP: K	§ 0 <b>√</b> 993 ∑	026	R	0.062	0.102	
R1 (stream)	P R	°6,622 ~	0.116	R	1.281	0.259	
R2 (stream)	R	0.4560	0.110	R	0.456	0.111	
R3 (stream)	R	J 1.08 7 %	0.209	R	1.084	0.208	
R4 (stream)	°√R f	0 1.151	0.282	R	1.315	0.375	

<sup>\*</sup> Entry route: letters S, D, and R correspond to the dominant entry path – spray drift, drainage, and runoff Values in bold are maximum of single and multiple application.



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Table 9.2.5-11: Maximum PECsw and PECsed of the metabolite AE F130619 for all scenarios at step 3 following application to maize (2 x 30 g a.s./ha, 7 d interval)

Use pattern:	<u> </u>	naize (2 x 30 g a.s./ha, Maize 2 x 30 g a	s./ha, 7 d interval	<del>Ž</del>
ose pattern.			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	AE F1		AE F11306 mritiple applic	19
FOCUS scenario	single ap	plication	mattiple applic	eation S
1 ocos sechario	<b>PEC</b> <sub>sw</sub>	PEC <sub>sed</sub>	PEC	eatton & PECod & P
	[µg/L]	[µg/kg]		[µg@kg] 《
D3 (ditch)	0.016	0.003		<b>6</b> .003 <b>5</b>
D4 (pond)	< 0.001	<0.00	Q <sup>&lt;</sup> 0.001	, 0.002° , ¢
D4 (stream)	< 0.001	<0.001	0.96A Q (	<0.001
D5 (pond)	< 0.001	0.001	0.001 0.001 0.001 0.001 0.001	0.004
D5 (stream)	< 0.001	\$0.001 \$\(\alpha\)	0.001	0.002 0.005 0.005 0.005
D6 (ditch)	0.016	°0.00°	0.014° 0	$\sqrt{0.005}$
RI (pond)	0.002	0.002	0,010	0.003
R1 (stream)	0.040	0.006	(a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	0.01/
R2 (stream)	0.052	0.0100 °		0.013
R3 (stream)	0.089		0.089	@* 0.014
R4 (stream)	0.101	0.4921	0.010 0.010 0.052 0.089 0.121	0.029
alues in bold are m	aximum of single and	multiple application		***
				<b>\</b>
en 4: The maxim	um PEC and PEC	Sea Values for releva	nt & OCUS Step 4 scena	irios considering
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p <sup>o</sup>				



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Table 9.2.5-12: Maximum PECsw and PECsed values of foramsulfuron and the metabolite AE F1306 at Step 4 with mitigation options after single application in maize (1 x 60 g/ha)

	Step 4 with mitigation	on options after sin	ngle application in	maize (1 x 60 g/ha	
			Maize, 1 x 6	60 g a.s./ha🏷	
Step 4		Forams	sulfuron	AE F13	60619 × ×
Buffer Width	1	PEC <sub>sw</sub>	PEC <sub>sed</sub>	AREC <sub>sw</sub>	PEC
& Type	FOCUS Scenario	μg/L]	Ecsed  agg/kg	μg/L]	Y [µĝ/kg]
с турс	D3 (ditch)	0.055	©0.015	@i <0.001 &	- 185751 Q
	D4 (pond)	0.008	0.015	<0.001	\$0.001 \$0.001
	D4 (stream)	0.061	0.005		\$<0.QQ
	D5 (pond)	0.010	0.005	& <0.06¥	6 0.002 L
10	D5 (stream)	0.057	0.008	l@`<∩ ñ¥n 、♡	0.002 0.001 0.001
10m	D6 (ditch)	0.058	6 0.0 <b>29</b>	1 / ///\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	0.004
(SD & RO)	R1 (pond)	0.01	0.029 0.025 9.101	0.035	e <0.001
	R1 (stream)		<b>9</b> .101 0.	0.035	9 0 00 5 L
	R2 (stream)	0.547 Q.426		E YAYTU ,	<b>3</b> .009 <b>3</b>
	R3 (stream)		0.192	<b>7 30</b> .080	0.013
	R4 (stream)	1.00 1.00 N	0.192 0.258 0.008 0.013	0.092	\$ 0.0¥9
	D3 (ditch)	。♥ U <i>XU</i> ZO % ¥	0.008	S <0.001	<b>∞</b> 0001
	D4 (pond)	0.006	0.013		©.001 <0.001
	D4 (stream) D5 (pond)	0.008	0.000	99.001	°<0.001
	D5 (pond)	0.008	0.013 0.004 0.007 0.007 0.028	\$\begin{align*} \begin{align*} \begi	0.002 0.001
20m	D6 (ditch)		0.007	0,001	0.001
(SD & RO)	R1 (nond)	0,007 0,007	L 0.028	30.001	< 0.001
	R1 (stream)	© 0.279 %	© 53 %	0.018	0.003
	R2 (stream)	₩ 0.221 æ	√,0.054© <sup>*</sup>	0.024	0.005
	R3 (Gream)	7 ~ 526 ° 5	Ø 0.1 <b>0</b> 4	0.042	0.007
	R4 stream 's	<b>₹</b> 0.5 <b>58</b>	Q 0.40 %	<b>\$0.048</b>	0.010
SD and RO	Spray drift and run-c	fkbuffer /		R <sub>A</sub>	
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	D4 (pond) D4 (stream) D5 (pond) D5 (stream) D6 (ditch) R1 (pond) R2 (stream) R3 (stream) R4 (stream) Spray (c) ft and run-o				



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Table 9.2.5- 13: Maximum PEC<sub>sw</sub> and PEC<sub>sed</sub> values of foramsulfuron and the metabolite AE F1306 of at the mitigation antions after single application in maize (1 x 30 g/ha)

	Step 4 with mitiga	tion options after	single application	in maize (1 x 30 g/	na)
Stor 4			Maize, 1 x	30 g a.s./ha	(ha)
Step 4		Forams	ulfuron	ÕĂE F	
Buffer		DEC	DEC	<b>REC</b> sw	
Width	FOCUS Scenario	PECsw [μg/L]	PEC <sub>sed</sub> [µ∰kg]	κυCsw μg/L]	PEC.
& Type			7/77		V
	D3 (ditch)	0.027	0.008	<b>6</b> <0.001 €	0.001 0.000
	D4 (pond) D4 (stream)	0.004 <b>0.030</b>	0.008	<0.001 \$\delta 0.001	√0.004 √√ <0.001 √√
	D5 (pond)	0.005	0.002	( 0.001	© <0.001 <0001
1.0	D5 (stream)	0.028	ſ	<0.001	\$0.004 \$0.004
10m	D6 (ditch)	0.029	0.004	<b>6</b> 004 S	0.002
(SD & RO)	R1 (pond)	0.006	06/13 Q	0.001	0.002 <0.001 ©003
	R1 (stream)	0.263	♥	<u> </u>	©003 ©
	R2 (stream)	0.200	0.049 0.097	0.023	(0.005)
	R3 (stream)	Ø.490°	L 0.097	0.040 °	🦠 0.00₽
	R4 (stream)	0.523	0.004	0.046	2 20001
	D3 (ditch) D4 (pond)	<b>0.014</b>	0.004 0.000 0.002	(° <0.001 (° <0.901 (° <0.901	0.001 0.001
	D4 (polid) D4 (stream)	<b>50.016</b>	0.002	\$ 49901 \$ < 0.001	<0.001
	D4 (pond) D4 (stream) D5 (pond)	0.00	0.002 0.010 0.02	~ (0.001 ~ (0.00 <u>1</u>	<0.001
20	D5 (stream)	LY DAYE @.	₩.003	<0.001	< 0.001
20m	D ( (1) (1) 8 8	60016 48	√ 0.013√ °	V .0.904 ≈	0.002
(SD & RO)	R1 (stream)	© 0.004	∞.º 0.0 <b>0</b> 8 %	( <0.001 Å	< 0.001
	R1 (stream)	<b>3</b> 0.135 €	0,027 O	0.0010	0.001
	D2 (ctroom) c	1& 18160 ≪al	0.026 <sub>0</sub>	0.012	0.002
	R3 (spream)	19.256	0.05	921	0.004
SD and D	R4 (stream)	0.2/4	0.072	≪0.024	0.005
Values ir	n hold are maximum	n-om ounce Sof single and mondi	tinlessonlication	<b>Q</b>	
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\$ .Q					
	R3 (stream)  R4 (stream)  Spray drift and run  bold are maximum				

Document MCP: Section 9 Fate and behaviour in the environment FSN+IDF OD 45 (22.5+22.5)

Table 9.2.5- 14: Maximum PEC<sub>sw</sub> and PEC<sub>sed</sub> values of foramsulfuron and the metabolite AE F1306@ at Step 4 with mitigation options after multiple application in maize (2 x 30 g/ha)

Step 4 with mitigation options after multiple application in maize (2 x 30 g/na)					
Step 4		Maize, 2 x 30 g a.s./ha, 7 d interval			
		Foramsulfuron		<b>®</b> AE F130612 <b>№ № №</b>	
Buffer Width & Type	FOCUS Scenario	PEC <sub>sw</sub> [μg/L]	PEC <sub>sed</sub>	PECsw [μg/L]	PEGS [µgˈkg]
10m (SD & RO)	D3 (ditch)	0.022	<b>9</b> .008	© <0.001 _ €	7 60.001 °
	D4 (pond)	0.006	0.016	<0.001 <sub>4</sub> <sup>©</sup>	Ø0.002€
	D4 (stream)	0.025	. 0.005 S	0.001	$^{\circ}$ <0.QQ $^{\circ}$
	D5 (pond)	0.009	0.032	& °0.0015	√y 0.0 <b>0</b> 3 √
	D5 (stream)	0.026	0.014	0.001 0.001	©.002, ©
	D6 (ditch)	0.034	° 0.0270° 🐇	Ø 80 <b>0,0</b>	0.004
	R1 (pond)	0.059	0.02	<b>00.002</b>	0.002
	R1 (stream)	0.580		0.045	0.006 0.006 0.006
	R2 (stream)	Q.200 °	0.049	<u> </u>	Ø.006 ₽°
	R3 (stream)	<b>9.490</b>	0.09	<b>6,040</b>	√ 0.00√ √
	R4 (stream)	0.598	© 0°4√75 √	<b>0.055</b>	\$\text{\$\ext{\$\text{\$\}\$}}}}}}}} \end{linethindeth}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}
20m (SD & RO)	D3 (ditch)	0.012	<b>0</b> .004 ©	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<b>%</b> 001
	D4 (pond)	0.004	0.014	<b>0.001</b>	0.002
	D4 (stream)	<b>9</b> .013	0.0 <b>0</b>	<b>20:</b> 001	<0.002
	D5 (pond)	0.007	o <sup>y</sup> 00029	0.001	0.003
	D5 (stream) 🐃	0,094	0.014	0.091	0.002
	D6 (ditch)	Ø <b>Ø</b> Ø Ø Ø	©0.026	Ç″ <b>0</b> :908 , Q	0.004
	R1 (pond)	<b>20.014</b>	√ 0. <b>02</b> 6 ×	80.001	< 0.001
	R1 (stream) R2 (stream)	© 0.303 3	0065 📞	0.0240)	0.004
	R2 (stream) 0	😂 0 <b>,1</b> 04 🝣	<b>€</b> 0.026 ©	0.012	0.003
	R3 (Feam)	<b>0</b> ,256	0.05	0.021	0.004
	R45 stream	<b>√</b> 0.313>>	0.095	<b>9</b> .029	0.007

SD and RO: Spray strift and run-off buffer

### CP 9.3 Fate and behaviour in an

No volatility studies on the preparation have been performed Details of volatility for the active substance are given Dockment MCA Section 1. Please refer to Document MCA 7.3.2.

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Please refer to Document MCA 3.2.

## Predicted environmental concentrations from airborne transport

Due to the low half wife in and the very low vapour pressure no exposure via air is expected.

# CP 9.4 Estimation of concentrations for other routes of exposure

There are no other routes of exposure to be considered if the product is used according to good agricultural practice.