Appendix to: Conclusion on the peer review of the pesticide risk assessment of the active substance cyprodinil. doi:10.2903/j.efsa.2025.9209

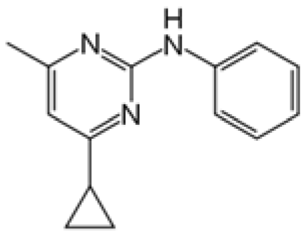
Appendix B – List of end points for the active substance and the representative formulation

Identity, Physical and Chemical Properties, Details of Uses, Further Information (Regulation (EU) N° 283/2013, Annex Part A, points 1.3 and 3.2)

Active substance (ISO Common Name)	Cyprodinil
Function (*e.g.* fungicide)	Fungicide

Rapporteur Member State	France
Co-rapporteur Member State	Bulgaria

Identity (Regulation (EU) N° 283/2013, Annex Part A, point 1)

Chemical name (IUPAC)	4-cyclopropyl-6-methyl-*N*-phenylpyrimidin-2-amine
Chemical name (CA)	4-cyclopropyl-6-methyl-*N*-phenyl-2-pyrimidinamine
CIPAC No	511
CAS No	121552-61-2
EC No (EINECS or ELINCS)	Not available
FAO Specification (including year of publication)	FAO specification : 990 g/kg (2009)
Minimum purity of the active substance as manufactured	990g/kg
Identity of relevant impurities (of toxicological, ecotoxicological and/or environmental concern) in the active substance as manufactured	none
Location of the (proposed) reference specification (for significant impurities)	*RAR Volume 4 (December/2023)*
Molecular formula	$C_{14}H_{15}N_3$
Molar mass	225.3 g/mol
Structural formula	

Physical and chemical properties (Regulation (EU) N° 283/2013, Annex Part A, point 2)

Melting point (state purity)	75.9°C (purity: 999 g / kg)
Boiling point (state purity)	No boiling point < 360 °C (purity: 999 g / kg)
Temperature of decomposition (state purity)	No decomposition <360 °C (purity: 992 g / kg)
Appearance (state purity)	beige fine powder with agglomerates (purity: 992 g / kg) and white fine crystals (purity : 999 g/kg)
Vapour pressure (state temperature, state purity)	at 25 °C: 4.7-5.1 $\cdot 10^{-4}$ Pa (crystal modification respectively)
Henry's law constant (state temperature)	6.6×10^{-3} - 7.2×10^{-3} Pa · m^3 / mol (calculated at 25°C)
Solubility in water (state temperature, state purity and pH)	pH 5.0: 20 mg/ l at 25 °C (buffer solution) (HPLC method) pH 7.0: 13 mg / l at 25 °C (buffer solution) pH 9.0: 15 mg / l at 25 °C (buffer solution)
Solubility in organic solvents (state temperature, state purity)	All results at 25 °C (purity: 992 g/kg): methanol 150 g/l dichloromethane > 500 g/l ethyl acetate > 500 g/l acetone > 500 g/l toluene 440 g/l n-octanol 140 g/l n-hexane 26 g/l
Surface tension (state concentration and temperature, state purity)	69.3 mN/m at 22.5 ± 0.5 °C (90 % saturated solution)(purity: 999g/kg)
Partition coefficient (state temperature, pH and purity)	At 25°C *pH 5.0 : log P_{ow}: 3.9 ± (0.005)* *pH 7.0 : log P_{ow}: 4.0 ± (0.009)* *pH 9.0 : log P_{ow}: 4.0 ± (0.027)*
Dissociation constant (state purity)	pKa = 4.44 at 20°C (purity: 999g/kg)
UV/VIS absorption (max.) incl. ε (state purity, pH)	λmax = 270.8 nm : ε = 29200 l / mol · cm in neutral solution and = 28400 l / mol · cm in basic solution, respectively. In acidic solution, at λmax 271.6 nm : ε= 23400 l / mol · cm and at 316.8 nm **ε**=5700 l / mol · cm. No further absorption maxima were observed between 290 and 750 nm (if absorption, ε<6000)
Flammability (state purity)	Cyprodinil is not considered flammable
Explosive properties (state purity)	Cyprodinil is not considered explosive
Oxidising properties (state purity)	Cyprodinil is not considered oxidising

Summary of representative uses evaluated, for which all risk assessments needed to be completed (cyprodinil)
(Regulation (EU) N° 284/2013, Annex Part A, points 3, 4)

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 of 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)		
Apple	EU	A8637C (Chorus 50 WG)	F	*Venturia inaequalis*	WG	500 g/kg	Foliar spray	BBCH 10-71	2-3	21	-	450-1500	0.225-0.375	21	225 g a.s./ha in 450L. Max rate 375 g a.s./ha in 1500L.
Barley	EU	A14325E (Kayak)	F	*Pyrenophora teres*	EC	300 g/L	Foliar spray	BBCH 30-61	1-2	14	-	150-400	0.450	45	

(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 sucking 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 equipment used must be indicated
(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 range from first to 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 applications possible under practical conditions of use
(l) The values should be given in g or kg whatever gives the more manageable number (e.g. 200 kg/ha instead of 200 000 g/ha or 12.5 g/ha instead of 0.0125 kg/ha
(m) PHI - minimum pre-harvest interval

<u>Summary of additional intended uses for which MRL applications have been made, that in addition to the uses above, have also been considered in the consumer risk assessment (*name of active substance or the respective variant*)</u>
Regulation (EC) N° 1107/2009 Article 8.1(g))

Important note: efficacy, environmental risk and risk to humans by exposure other than via their diet have not been assessed for these uses

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 of 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)		
MRL Application (according to Article 8.1(g) of Regulation (EC) No 1107/2009)															

(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 sucking 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 equipment used must be indicated
(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 range from first to 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 applications possible under practical conditions of use
(l) The values should be given in g or kg whatever gives the more manageable number (e.g. 200 kg/ha instead of 200 000 g/ha or 12.5 g/ha instead of 0.0125 kg/ha
(m) PHI - minimum pre-harvest interval

Further information, Efficacy

Effectiveness (Regulation (EU) N° 284/2013, Annex Part A, point 6.2)

	Considering that the substance is approved and authorizations of plant protection products containing the substance have already been evaluated according to the Uniform Principles (Regulation (EC) No 546/2011), no other efficacy documentation is deemed to be necessary at this stage. More detailed consideration will be fully assessed in the context of subsequent applications for products authorization.

Adverse effects on field crops (Regulation (EU) N° 284/2013, Annex Part A, point 6.4)

	See above

Observations on other undesirable or unintended side-effects (Regulation (EU) N° 284/2013, Annex Part A, point 6.5)

	See above

Groundwater metabolites: Screening for biological activity (SANCO/221/2000-rev.10-final Step 3 a Stage 1)

	Met1 CGA321915	Met2 CGA249287	Met3 CGA275535	Met4	Met5	Met6
Activity against target organism	No	No	No data	-	-	-

Methods of Analysis

Analytical methods for the active substance (Regulation (EU) N° 283/2013, Annex Part A, point 4.1 and Regulation (EU) N° 284/2013, Annex Part A, point 5.2)

Technical a.s. (analytical technique)	GC-FID, silica column with DB 5 stationary phase
Impurities in technical a.s. (analytical technique)	GC-FID, silica column with DB 5 stationary phase
Plant protection product (analytical technique)	HPLC/UV (254 nm) GC-FID, CP-Sil 8CB fused silica column

Analytical methods for residues (Regulation (EU) N° 283/2013, Annex Part A, point 4.2 & point 7.4.2)

Residue definitions for monitoring purposes

Food of plant origin		cyprodinil for fruit and cereal crops) NOA422054 (free and conjugated) for rotational crops
Food of animal origin		sum of cyprodinil and CGA 304075 (free and conjugated), expressed as cyprodinil
Soil		cyprodinil
Sediment		cyprodinil
Water	surface	cyprodinil
	drinking/ground	cyprodinil
Air		cyprodinil
Body fluids and tissues		Cyprodinil and metabolite 1U

Monitoring/Enforcement methods

Food/feed of plant origin (analytical technique and LOQ for methods for monitoring purposes)	LC-MS/MS, (QuEChERS) LOQ =0.01mg/kg in high water, high oil content, high acid content, dry commodities and no group (straw) Extraction efficiency not sufficient – Data gap Method and its ILV for monitoring NOA422054 (free and conjugated) in rotational crops – Data gap.
Food/feed of animal origin (analytical technique and LOQ for methods for monitoring purposes)	Meat, fat, liver, kidney, milk and eggs: HPLC-MS/MS, LOQ=0.01mg/kg for cyprodinil and CGA 304075 (free and conjugated)
Soil (analytical technique and LOQ)	LC-MS/MS, LOQ = 0.01mg/kg for cyprodinil, CGA249287, CGA275535 and CGA321915, LOQ = 0.01mg/kg, for each
Water (analytical technique and LOQ)	LC-MS/MS, LOQ = 0.05 µg/L for cyprodinil, CGA249287 CGA275535 and CGA321915 LOQ = 0.05 µg/L, for each
Air (analytical technique and LOQ)	LC-MS/MS, LOQ= 0.5µg/m^3

Body fluids and tissues (analytical technique and LOQ)	LC-MS/MS (blood), LOQ=0.01mg/kg (QuEChERS) in body tissues using the methods for the determination of cyprodinil residue in foodstuffs of animal origin. Data gap for a validated monitoring method for metabolite 1U in body fluids and tissues.

Classification and labelling with regard to physical and chemical data (Regulation (EU) N° 283/2013, Annex Part A, point 10)

Substance	Cyprodinil
Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended][1]:	No classification required
According to the Peer review criteria for harmonised classification according to Regulation (EC) No 1272/2008 may be met for:	No classification required

[1] Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.

Impact on Human and Animal Health

Absorption, distribution, metabolism and excretion (toxicokinetics) (Regulation (EU) N° 283/2013, Annex Part A, point 5.1)

Rate and extent of oral absorption/systemic bioavailability	76 % (based on urinary and biliary excretion and on tissue levels within 48 h in rats after a single oral administration of 100 mg/kg bw).
Toxicokinetics	Cmax = 0.1-0.5 and 3.5-9.0 mg/L; Tmax = 0.5-1 hours and about 8-12 hours, $t_{1/2}$ = 1-2 hours and 19-36 hours for the low and the high dose respectively
Distribution	Widely distributed (liver, kidney, lung, blood, plasma, thyroid)
Potential for bioaccumulation	No evidence for accumulation
Rate and extent of excretion	Rapid (approx. 88 % within 48 h), mainly via urine (35 %), faeces (14 %) and bile (39 %) within 24 h
Metabolism in animals	Extensively metabolised (92 %); 18 isolated metabolites independent of sex and dose
In vitro metabolism	No new metabolite was detected in human liver microsomes compared to the rat liver microsomes
Toxicologically relevant compounds (animals and plants)	Cyprodinil, CGA263208
Toxicologically relevant compounds (environment)	Cyprodinil

Acute toxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.2)

Rat LD_{50} oral	> 2000 mg/kg bw	
Rat LD_{50} dermal	> 2000 mg/kg bw	
Rat LC_{50} inhalation	> 1200 mg/m^3 /4h (*nose only*) (max attainable concentration)	
Skin irritation	Non-irritant	
Eye irritation	Non-irritant	
Skin sensitisation	Sensitising (*Maximisation test*)	**Skin Sens 1**
Phototoxicity	Not phototoxic (PIF = 0.748)	

Short-term toxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.3)

Target organ / critical effect	Rat, mouse: liver (increased weight, hypertrophy, hepatocyte necrosis, glycogen depletion in the mouse)	

	Rat: thyroid (hypertrophy of follicular epithelium), kidney (chronic tubular lesion), pituitary (cell hypertrophy) Dog: reduced body weight development and food consumption, hepatocytes pigmentation	
Relevant oral NOAEL	90-day, rat: 3.14 mg/kg bw per day 90-day, mouse: 73.3 mg/kg bw per day 90-day, dog: 210 mg/kg bw per day 1-year, dog: 65.6 mg/kg bw per day	
Relevant dermal NOAEL	28-day, rat: 1000 mg/kg bw per day	
Relevant inhalation NOAEL	No data - not required	

Genotoxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.4)

In vitro studies	Two Ames test, two *in vitro* mammalian cell gene mutation (V79/HPRT), *in vitro* chromosome aberration (human lymphocytes), *in vitro* unscheduled DNA synthesis: negative *in vitro* chromosome aberration (CHO cells): equivocal	
In vivo studies	Mouse *in vivo* micronucleus: negative	
Photomutagenicity	Not required	
Potential for genotoxicity	Cyprodinil is unlikely to be genotoxic	

Long-term toxicity and carcinogenicity (Regulation (EU) N°283/2013, Annex Part A, point 5.5)

Long-term effects (target organ/critical effect)	Rat: liver (increased weight and degenerative changes (sinusoidal cystic dilatation)) Mouse: Pancreas (hyperplasia of exocrine pancreas)	
Relevant long-term NOAEL	2-year, rat: 2.7 mg/kg bw per day 18-month, mouse: 14.7 mg/kg bw per day	
Carcinogenicity (target organ, tumour type)	Rat and mouse: no tumours No carcinogenic potential	
Relevant NOAEL for carcinogenicity	2-year, rat: > 73.6 mg/kg bw per day; 18-month, mouse: > 558.1 mg/kg bw per day	

Reproductive toxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.6)

Reproduction toxicity

Reproduction target / critical effect	Parental toxicity: reduced bw gain; liver and kidney effects Reproductive toxicity: delayed sexual maturation in males, decreased anogenital distance in males and females from both generations	

	Offspring's toxicity: delayed sexual maturation in males, decreased anogenital distance in males and females from both generations Additional effects at highest dose level - relevant for classification: decreased mean number of implantations in F0 and F1 leading to decreased mean number of pups born and a reduction in live pups, decreased number of ovarian follicles in F1 dams, delayed male sexual maturation	Repr 1B H360F or Repr 2 H361f
Relevant parental NOAEL	74 mg/kg bw per day	
Relevant reproductive NOAEL	23 mg/kg bw per day	
Relevant offspring NOAEL	23 mg/kg bw per day	

Developmental toxicity

Developmental target / critical effect	Rat: Maternal toxicity: decreased body weight gains and food consumption Developmental toxicity: decreased bw and delay of ossification Rabbit: Maternal toxicity: decreased body weight gains and food consumption Developmental toxicity: increased incidence of additional 13th ribs	
Relevant maternal NOAEL	Rat: 200 mg/kg bw per day Rabbit: 150 mg/kg bw per day	
Relevant developmental NOAEL	Rat: 200 mg/kg bw per day Rabbit: 150 mg/kg bw per day	

Neurotoxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.7)

Acute neurotoxicity	Neurotoxicity NOAEL: 200 mg/kg bw; alteration of FOB and of motor activity, hypothermia Systemic NOAEL: 200 mg/kg bw; clinical signs	
Repeated neurotoxicity	Neurotoxicity NOAEL: 601 mg/kg bw; no adverse effect Systemic NOAEL: 54.5 mg/kg bw; Reduced body weight and body weight gain; effects on liver, kidney and thyroid gland.	
Additional studies (e.g. delayed neurotoxicity, developmental neurotoxicity)	none	

Other toxicological studies (Regulation (EU) N° 283/2013, Annex Part A, point 5.8)

Supplementary studies on the active substance	Immunotoxicity mouse study: Immunotoxicity NOAEL = 1245.3 mg/kg bw per day; no effect Systemic NOAEL = 468.3 mg/kg bw per day; increased liver weight
Endocrine disrupting properties	ED assessment cannot be finalised for **T- modality**. Cyprodinil is an endocrine disruptor for the **EAS-modalities** according to the ED scientific criteria laid down in Regulation (EC) 2018/605 (**scenario 1b** of the ECHA/EFSA ED Guidance 2018). **NOAEL/LOAEL (endocrine adversity)** = 23/77 mg/kg bw per day based on delayed sexual maturation in males and decreased AGDI in the 2-generation toxicity study in rats.
Studies performed on metabolites or impurities	<u>CGA249287:</u> Rat: oral LD_{50} >2000 mg/kg bw Rat: 90-d toxicity study: NOAEL = 79.5 mg/kg bw per day (decreased BW, BWG and food consumption) QSAR Toolbox and TOXTREE: no SA34 alert Ames: negative *In vitro* gene mutation assay in mammalian cells (MLA/TK): negative *In vitro* chromosome aberrations assay: negative Unlikely to be genotoxic <u>CGA263208:</u> Rat: oral LD_{50} >2000 mg/kg bw Rat: 90-d toxicity study: NOAEL = 17.8 mg/kg bw per day (decreased BW, BWG and food consumption, changes in haematology and clinical chemistry findings, effects liver and spleen) Rat: Pre-natal developmental toxicity study: maternal NOAEL = 20 mg/kg bw per day (decreased BWG at beginning of treatment), developmental NOAEL = 200 mg/kg bw per day (skeletal anomalies and variations) QSAR Toolbox and TOXTREE: no SA34 alert Ames: negative *In vitro* gene mutation assay in mammalian cells (V79/HPRT): negative *In vitro* chromosome aberrations assay: positive *In vivo* micronucleus assay: negative Unlikely to be genotoxic

Studies performed on metabolites or impurities (continued)	CGA304075 (major rat metabolite): Rat: oral LD_{50} >2000 mg/kg bw QSAR Toolbox and TOXTREE: no SA34 alert Ames: negative *In vitro* gene mutation assay in mammalian cells (V79/HPRT): negative *In vitro* micronucleus assay: negative Unlikely to be genotoxic CGA275535: Rat: oral LD_{50} >2000 mg/kg bw QSAR Toolbox and TOXTREE: no SA34 alert Ames: negative No potential for genotoxicity based on QSAR/read-across analysis and results of Ames assay No information on repeated dose toxicity has been provided to conclude on the general toxicity profile CGA321915: Rat: oral LD_{50} >2000 mg/kg bw Ames: negative *In vitro* gene mutation assay in mammalian cells (V79/HPRT): negative *In vitro* micronucleus assay: negative Unlikely to be genotoxic No information on repeated dose toxicity has been provided to conclude on the general toxicity profile

Studies performed on metabolites or impurities (continued)	NOA422054: Rat: oral LD_{50} >2000 mg/kg bw QSAR Toolbox and TOXTREE: SA34 alert Ames: negative *In vitro* gene mutation assay in mammalian cells (V79/HPRT): negative without S9, equivocal with S9 *In vitro* micronucleus assay: negative Genotoxic potential could not be excluded (data gap) No information on repeated dose toxicity has been provided to conclude on the general toxicity profile (data gap) CGA232449: Rat: oral LD50 >2000 mg/kg bw QSAR Toolbox and TOXTREE: SA34 alert Ames: negative Genotoxic potential could not be excluded (data gap) No information on repeated dose toxicity has been provided to conclude on the general toxicity profile (data gap) CGA304076: QSAR Toolbox and TOXTREE: SA34 alert Genotoxic potential could not be excluded (data gap) No information on repeated dose toxicity has been provided to conclude on the general toxicity profile I13c and I13b: QSAR Toolbox and TOXTREE: SA34 alert Genotoxic potential could not be excluded. No information on repeated dose toxicity has been provided to conclude on the general toxicity profile

Medical data (Regulation (EU) N° 283/2013, Annex Part A, point 5.9)

	Three cases of moderate, reversible local irritation (erythema, swelling of eyelids) occurred in 1992. One case of accidental eye exposure has been reported in 2000. Since December 2014 zero records of adverse health effects reported from the handling of cyprodinil during synthesis and formulation activities

Summary (Regulation (EU) N°1107/2009, Annex II, point 3.1 and 3.6)

Cyprodinil	Value (mg/kg bw (per day))	Study	Uncertainty factor
Acceptable Daily Intake (ADI)	0.03	rat, 2-year	100
Acute Reference Dose (ARfD)	2**	rat, acute neurotoxicity	100
Acceptable Operator Exposure Level (AOEL)	0.02*,**	rat, 90-day	100
Acute Acceptable Operator Exposure Level (AAOEL)	1.52*,**	rat, acute neurotoxicity	100

* Including correction for limited oral absorption/bioavailability (76 %).

**ARfD and AAOEL were not allocated during the previous assessment (EFSA, 2006 and European Commission 2010b). An AOEL of 0.03 mg/kg bw per day was established in the previous assessment (based on the 90-day rat study), without correction for oral absorption.

CGA249287	Value (mg/kg bw (per day))	Study	Uncertainty factor
Acceptable Daily Intake (ADI)	0.08	rat, 90-day	1000*
Acute Reference Dose (ARfD)	Not allocated	-	-

*Increased UF to account for the limited data package

CGA263208	Value (mg/kg bw (per day))	Study	Uncertainty factor
Acceptable Daily Intake (ADI)	0.02	rat, 90-day	1000*
Acute Reference Dose (ARfD)	Not allocated	-	-

*Increased UF to account for the limited data package

CGA304075	Value (mg/kg bw (per day))	Study	Uncertainty factor
Acceptable Daily Intake (ADI)	0.03*	rat, 2-year	100
Acute Reference Dose (ARfD)	2*	rat, acute neurotoxicity	100

*Major rat metabolite, therefore TRVs of the parent apply

Dermal absorption (Regulation (EU) N° 284/2013, Annex Part A, point 7.3)

Representative formulation A14325E; 300 g/L cyprodinil	Concentrate (300 g/L): 0.8 % Spray dilution (1.5 g/L):17 % Pro rata (1.125 g/L): 23% *In vitro human study performed on formulation*
Representative formulation A8637C; 500 g/kg cyprodinil	Concentrate (250 g/kg) : 0.3 % Intermediate (1.25 g/L): 32% Spray dilution (0.25 g/L): 40% *In vitro human study performed on formulation*

Exposure scenarios (Regulation (EU) N° 284/2013, Annex Part A, point 7.2)

Operators

Formulation: **Kayak** (**A14325E**)
Use: barley, tractor mounted equipment, downward spraying
application rate: 2x 0.45 kg a.s./ha

Models:	German (%AOEL)	UK POEM (%AOEL)	EFSA 2015* (%AOEL)	EFSA 2015* (%AAOEL)
No PPE (workwear)	315	2554	105	7.7
Gloves (ML and A**) + Coverall and sturdy footwear***	247 22	401	69	-

*last version of calculator from EFSA 2014, not applicable at the time of the dossier submission
**ML and A: during mixing/loading and application
***only in German model

Formulation: **Chorus** (**A8637C**)
Use: apple, tractor mounted equipment, upward spraying
application rate: 3x 0.375 kg a.s./ha (1500 L water/ha in UK POEM)

Models:	German (%AOEL)	UK POEM (%AOEL)	EFSA 2015* (%AOEL)	EFSA 2015* (%AAOEL)
No PPE (workwear)	993	1041	447	23
Gloves (ML and A**) + Coverall and sturdy footwear*** + RPE (hood and visor)**** Gloves + closed cab	932 150 53 -	733 - - -	179 - - 21	- - - -

Use: apple, tractor mounted equipment, upward spraying
application rate: 3x 0.225 kg a.s./ha (450 L water/ha in UK POEM)

Models:	German (%AOEL)	UK POEM (%AOEL)	EFSA 2015* (%AOEL)	EFSA 2015* (%AAOEL)
No PPE (workwear)	596	2047	281	14
Gloves (ML and A**)	559	1443	111	-

	Coverall and sturdy footwear*** Gloves + closed cab	90 -	- -	- 14	- -
	Field study: grapes, broadcast air assisted sprayer application normalised for 3 kg a.s./ha or for mean treated area of 8 ha/day Exposure with PPE (gloves and coverall M/L and A): 92% of AOEL				
	Use: apple, hand-held application, upward spraying application rate: 3x 0.375 kg a.s./ha				
	Models:	German (%AOEL)	UK POEM (%AOEL)	EFSA 2015* (%AOEL)	EFSA 2015* (%AAOEL)
	No PPE (workwear)	443	-	181	7.1
	Gloves (ML and A**) Coverall and sturdy footwear***	329 75	- -	54 -	- -
	Use: apple, hand-held application, upward spraying application rate: 3x 0.225 kg a.s./ha				
	Models:	German (%AOEL)	UK POEM (%AOEL)	EFSA 2015* (%AOEL)	EFSA 2015* (%AAOEL)
	No PPE (workwear)	266	-	132	5.3
	Gloves (ML and A**) Coverall and sturdy footwear***	197 45	- -	49 -	- -
	*last version of calculator from EFSA 2014, not applicable at the time of the dossier submission **ML and A: during mixing/loading and application ***only in German model ****Respiratory protective equipment (RPE) (hood and visor) in German model				

Workers	**Kayak** (**A14325E**): use on barley – 1 or 2 applications at 14d Re-entry task: inspection (2 h/day)		
	Exposure estimates (%AOEL)	EUROPOEM II	EFSA model
	2 applications with workwear	123	125
	1 application with workwear	73	72
	Chorus (**A8637C**): pome fruit (apple), re-entry for harvesting (8 h/day) Low application rate (0.225 kg a.s./ha) / High application rate (0.375 kg a.s./ha)		
	Exposure estimates (%AOEL)	EUROPOEM II	EFSA model
	3 applications (workwear (W))	1620 / 2700	1616 / 2693
	3 applications (W + gloves (G))	-	808 / 1346
	3 app, W+G, DFR 0.3 (7d)	81 / 135	-
	3 app, W+G, DFR 0.2 (10d)	-	- / 90
	1 application (W)	810 / 1350	

1 application (W+G)	405 / 675	405 / 675
1 app, W+G, DFR 0.2 (7d)	27 / 45	27 / 45
1 app, W+G, DFR 1.6 (0d)	-	216 / 360

Bystanders and residents

Kayak (A14325E) – barley, tractor-mounted equipment, downward spraying					
	% of AOEL				
EUROPOEM II (buffer strip 5m):	4.2% for bystanders				
German approach** (buffer strip 10m):	2.51 / 1.97 for bystanders (adults / children) 0.3 / 0.53 for residents (adults / children)				
German approach** (buffer strip 1m):	23.90 /18.66 for bystanders (adults/children) 4.38 /7.80 for residents (adults/children)				
EFSA 2015* (% of (A)AOEL) – 2 x 0.45 kg a.s./ha, buffer strip 2-3m					
Exposure pathway:	Drift	Vapour	Deposits	Re-entry	Sum
- R child - R adult	92.84 22.19	5.35 1.15	15.38 6.08	**150.52** 83.62	**187.80** 82.82
- B child - B adult	2.78 0.75	0.07 0.02	0.60 0.24	1.98 1.10	- -
EFSA 2015* (% of (A)AOEL) – 2 x 0.45 kg a.s./ha, buffer strip 10m, drift reduction					
- R child - R adult	25.51 4.82	5.35 1.15	1.79 0.71	**150.52** 83.62	**140.97** 70.96
- B child - B adult	0.73 0.15	0.07 0.02	0.07 0.03	1.98 1.10	- -
EFSA 2015* (% of (A)AOEL) – 1 x 0.45 kg a.s./ha, buffer strip 10m, drift reduction					
- R child - R adult	25.51 4.82	5.35 1.15	1.04 0.41	87.33 48.520	90.00 42.74
- B child - B adult	0.73 0.15	0.07 0.02	0.04 0.02	1.15 0.64	- -
Chorus (A8637C) – WG 500 g/L – 0.225 to 0.375kg a.s./ha – 450 to 1500 L water/ha Apple, tractor-mounted equipment, upward spraying					
	% of AOEL				
EUROPOEM II (buffer strip 5m):	149 to 249 for bys (low to high AR)				
German approach** (buffer strip 15m) (buffer strip 10m): (buffer strip 5m): (buffer strip 5m):	69 / 54 for bys (ad/ch) (high AR) 89 / 69 for bys (ad/ch) (low AR) 32 / 51 for res (ad/ch) (high AR) 20 / 32 for res (ad/ch) (low AR)				
German approach** (buffer strip 5m):	38 / 59 for res (ad/ch) (high AR) 23 / 37 for res (ad/ch) (low AR)				
EFSA 2015* – 3 x 0.375 kg a.s./ha, buffer strip 10m, drift reduction, DFR 1.8, DT50: 3d					
Exposure pathway:	Drift	Vapour	Deposits	Re-entry	Sum

- R child - R adult	35 19	5 1	10 4	77 43	96 51
- B child - B adult	1 0.6	0.07 0.02	0.7 0.3	3 2	- -
EFSA 2015* – 2 x 0.375 kg a.s./ha, buffer strip 10m, drift reduction, DFR 1.8, DT50: 3d					
- R child - R adult	35 20	5 1	16 7	77 43	96 51
- B child - B adult	1 0.6	0.07 0.02	0.5 0.2	3 1.5	- -
EFSA 2015* – 1 x 0.375 kg a.s./ha, buffer strip 10m, drift reduction, DFR 1.6					
- R child - R adult	35 19	5 1	10 4	68 70 / 38	89 73 / 47
- B child - B adult	1 0.6	0.07 0.02	0.3 0.2	2 1	- -
EFSA 2015* – 3 x 0.225 kg a.s./ha, buffer strip 10m, drift reduction, DFR 1.8, DT50: 3d					
Exposure pathway:	Drift	Vapour	Deposits	Re-entry	Sum
- R child - R adult	69 39	5 1	6 3	46 26	92 49
- B child - B adult	2 1	0.07 0.02	0.4 0.2	2 1	- -
EFSA 2015* – 2 x 0.225 kg a.s./ha, buffer strip 10m, drift reduction, DFR 1.8, DT50: 3d					
Exposure pathway:	Drift	Vapour	Deposits	Re-entry	Sum
- R child - R adult	69 39	5 1	9 4	46 26	92 49
- B child - B adult	2 1	0.07 0.02	0.4 0.2	2 1	- -
EFSA 2015* – 1 x 0.225 kg a.s./ha, buffer strip 10m, drift reduction, DFR 1.6					
Exposure pathway:	Drift	Vapour	Deposits	Re-entry	Sum
- R child - R adult	69 39	5 1	6 3	41 23	88 46
- B child - B adult	2 1	0.07 0.02	0.2 0.1	1 1	- -
*last version of calculator from EFSA 2014, not applicable at the time of the dossier submission **German approach:					

Classification with regard to toxicological data (Regulation (EU) N° 283/2013, Annex Part A, Section 10)

Substance :	Cyprodinil
Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended][2] :	Commission Regulation (EU) No 944/2013 (5th adaptation to technical and scientific progress of Regulation (EC) No 1272/2008): **Skin Sens 1 H317** "May cause an allergic skin reaction"
According to the eer review harmonised classification according to Regulation (EC) No 1272/2008 may be met for:	**Repr 1B H360F** "May damage fertility" or **Repr 2 H361f** "Suspected of damaging fertility"

[2] Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.

Residues in or on treated products food and feed

Metabolism in plants (Regulation (EU) N° 283/2013, Annex Part A, points 6.2.1, 6.5.1, 6.6.1 and 6.7.1)

Primary crops (Plant groups covered) **OECD Guideline 501**	**Crop groups**	**Crop(s)**	**Application(s)**	**DAT** (days)
	Fruit crops	Apple	3x50 g as/hL, foliar spay	61 days
		Peach	4x 270 g as/ha, foliar spray 4x2700 g as/ha, foliar spay	1 day
		Tomato	2x750 g as/ha	14 days
	Root crops	Potato	3x 560 g as/ha, foliar spray	14 days
	Leafy crops	-	-	-
	Cereals/grass crops	Wheat	Field: 1x750 g/ha at BBCH16-18 + 1x500 g/ha at inflorescence emergence Greenhouse: 1x 750 g as /ha, 5-6 leaf stage	41 days 35 days
	Pulses/Oilseeds	-	-	-
	Miscellaneous	-	-	-
	According to the results of metabolism in primary crops, cyprodinil remains the dominant residue except in potato tubers. In potatoes, the metabolic pattern results from the translocation of degradation products through the plant from the soil metabolism of cyprodinil. In wheat, cyprodinil is intensively degraded, leading to the formation of at least 16 metabolic fractions. Metabolites CGA 263208 CGA232449, CGA304076, CGA 304075 and CGA275535 were identified at low levels. A new metabolism study on cereals conducted at a higher rate as to enable further metabolites identification is required (**data gap**). In all studied crops, metabolism proceeds mainly via hydroxylation of the phenyl and pyrimidine rings to form multiple metabolites followed by sugar conjugation.			

Rotational crops (metabolic pattern) **OECD Guideline 502**	**Crop groups**	**Crop(s)**	**PBI** (days)	**Comments**
	Root/tuber crops	radish	30, 120, 270, 365	
	Leafy crops	mustard	30, 120, 270, 365	
		lettuce	29, 124, 365	
	Cereal (small grain)	wheat	30, 120, 270, 365	
	Other	-	-	
Rotational crop and primary crop metabolism similar?	Metabolic pathways for cyprodinil in primary crops and rotational crops are similar in so far as hydroxylated metabolites are formed and then conjugated with sugar. However, a new metabolite NOA 422054 coming from the metabolism of the persistent metabolites in soil and translocated in plant is formed and then conjugated with sugar.			

	Conditions	cyprodinil	-	-	-
	20 min, 90°C, pH 4	96.7 %	-	-	-

Processed commodities (standard hydrolysis study) **OECD Guideline 507**	60 min, 100°C, pH 5	96 %	-	-	-
	20 min, 120°C, pH 6	96.35 %	-	-	-
Residue pattern in processed commodities similar to residue pattern in raw commodities?	No hydrolysis of cyprodinil was observed under any of the studied processing conditions. Cyprodinil is therefore considered to be hydrolytically stable under conditions representative of pasteurisation, baking, brewing, boiling and sterilisation.				

Plant residue definition for monitoring (RD-Mo) **OECD Guidance, series on pesticides No 31**	• **Fruit crops: Cyprodinil** • **Cereal/grass crops: Cyprodinil** by default (provisional, pending submission of new metabolism study on cereals) • **Rotational crops: NOA422054 (free and conjugated)** (provisional, pending confirmation of most suitable marker once data to finalise the residue definition for risk assessment in rotational crops are available – see below).
Plant residue definition for risk assessment (RD-RA)	• **Fruit crops: Cyprodinil** and **CGA232449 (free and conjugated)** (provisional, pending submission of toxicity data on CGA232449 - **data gap**) • **Cereal/grass crops: Cyprodinil** by default (provisional, pending submission of a new metabolism study on a cereal crop) • **Rotational crops: NOA422054 (free and conjugated)** (provisional, pending submission of toxicity data on NOA422054 and on documentation of the maximum storage duration and conditions of the residue samples of the available rotational crop field trials, and additional rotational crop trials measuring levels of NOA422054 and CGA321915, including conjugated residues, and covering the PEC accumulation in 20 cm of soil for cyprodinil, CGA249287 and CGA321915)
Conversion factor (monitoring to risk assessment)	-

Metabolism in livestock (Regulation (EU) N° 283/2013, Annex Part A, points 6.2.2, 6.2.3, 6.2.4, 6.2.5 6.7.1)

OECD Guideline 503 and **SANCO/11187/2013 rev. 3** (fish)	**Animal**	**Dose** (mg/kg bw/d)	**Duration** (days)	**N rate/comment**
Animals covered	Laying hen	0.4 19	4	6N and 284N compared to layer hen dietary burden intake Phenyl and pyrimidine radiolabel

	Goat/Cow	0.2 9.9 4.11 4	4 4 4	2N and 106 N compared to layer ruminant dietary burden intake Phenyl and pyrimidine radiolabel 44 N compared to layer ruminant dietary burden intake Phenyl radiolabel 44 N compared to layer ruminant dietary burden intake Pyrimidine radiolabel
	Pig	-	-	-
	Fish	-	-	**Data gap**
	The conclusions on relevance of metabolites are based on the dietary burden calculation for the representative crops. Further authorisations in feed crops might change the conclusions.			

Time needed to reach a plateau concentration in milk and eggs (days)	Egg: plateau not reached Milk: plateau not reached
Animal residue definition for monitoring (RD-Mo) **OECD Guidance, series on pesticides No 31**	Sum of cyprodinil and CGA304075 (free form and glucuronide) expressed as cyprodinil
Animal residue definition for risk assessment (RD-RA)	Sum of cyprodinil and CGA304075 (free form and glucuronide) expressed as cyprodinil Genotoxity of metabolite CGA304076 in milk has to be addressed (**data gap**).
Conversion factor (monitoring to risk assessment)	/
Metabolism in rat and ruminant similar (Yes/No)	Yes
Fat soluble residues (Yes/No) **(FAO, 2009)**	Yes (cyprodinil)

Residues in succeeding crops (Regulation (EU) N° 283/2013, Annex Part A, point 6.6.2)

Confined rotational crop study (Quantitative aspect) **OECD Guideline 502**	No residue above 0.01 mg/kg of cyprodinil is expected in wheat grain. Nevertheless residues of NOA422054 and its conjugates may be expected: • in forage at 0.027 and 0.016 mg/kg for 120 and 365 DAT, • in straw at 0.023 mg/kg for 30 DAT and at 0.116 mg/kg for 120 DAT. • in radish top at all plant back intervals up to 0.054 mg/kg and in radish roots at 30 and 120 DAT up to 0.022 mg/kg. • in mustard leaves up to 0.052 and 0.066 mg/kg at 30 and 120 DAT.

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Field rotational crop study **OECD Guideline 504**	Residues of cyprodinil and selected metabolites were investigated in field rotational crops following application to spring wheat at BBCH30. The analytical methods used in those studies are not fully validated due to insufficient validation data (**data gap**). Furthermore, samples were stored frozen at least a year before analysis in studies n°209-99 and n°210-99 and from 1 to 20 months (37 to 590 days) in studies 201/00 and gr33800 with radish roots being stored longer than 3 months. The stability of NOA422054 is not demonstrated for this period of time (stability in radish root < 3 months)(**data gap**). The concentrations in soil calculated in these trials (all in NEU) are lower than the PEC accumulation in 20 cm of soil for cyprodinil (0.74X). Therefore their results were considered as underestimating the possible concentrations of the 3 compounds cyprodinil and metabolites NOA422054 and CGA321915 in RC plants. Under those conditions of use of cyprodinil, NOA422054 was found in mature samples of radish tops from 30 DAT up to 0.14 mg/kg but was not found in roots, in lettuce up to 0.04 mg/kg from 30 DAT and in spring wheat whole plant from 30 DAT (aged 34 days) at a maximum of 0.07 mg/kg. Two additional studies (NEU and SEU) with a higher dose analysed only cyprodinil and none of the metabolites. **Data gaps** are set to establish reliable residue concentations of metabolites in rotational crops through additional field trials, i.e. measuring levels of NOA422054 and CGA321915, including conjugated residues, and covering the PEC accumulation in 20 cm of soil for cyprodinil, CGA249287 and CGA321915. In addition the toxicity of NOA 422054 should be addressed.

Stability of residues (Regulation (EU) N° 283/2013, Annex Part A, point 6.1)
OECD Guideline 506

Plant products (Category)	**Commodity**	**T (°C)**	**Stability** (Months)		
			Cyprodinil	CGA321915	NOA422054
High water content	Peach fruit	-18	26	-	-
	Apple fruit	-18	26	-	-
	Apple pomace	-18	26	-	-
	Lettuce	-18	-	18	18
High oil content	Canola seed	-18	9	-	-
	Canola meal	-18	9	-	-
	Canola refined oil	-18	9	-	-
	Almond nutmeat	-18	10	-	-
High protein content	-	-	-	-	-
High starch content	Wheat grain/ears	-18	24	18	18
	Potato	-18	24	-	-
	Radish roots	-18	-	18	<3 (unstable)
	Sugar beet root	-20	-	-	13
High acid content	Grapes berry	-18	24	-	-
	Strawberry	-18	24	-	-
others	Wine	-18	24	-	-
	Wheat straw	-18	24	18	18

Cyprodinil is sufficiently stable and did not decline beyond 30% at -18°C for a period of at least 9 months in high oil content commodity (almond, canola), for 26 months in peach (high water content commodity) and apple (high water content commodity), got 24 months in high starch content commodities (wheat grain and potato), high acid content commodities (grapes and strawberry) and in cereal straw (wheat straw).

The stability of CGA321915 and NOA422054 (no decline beyond 30%) is demonstrated at -18°C in lettuce, wheat grain and wheat straw for 18 months. In radish roots CGA321915 is stable for 18 months at -18°C but NOA422054 significantly declined (>70%) within 3 months at -18°C. NOA422054 was stable in sugar beet roots for 13 months at -20°C.

Animal	**Animal commodity**	**T (°C)**	**Stability** (Months)		
			Cyprodinil	CGA304075 free form	CGA304075 incurred
Bovine	Muscle	-18	-	<3 (unstable)	-
Bovine	Liver	-18	18-19	<3 (unstable)	2
Bovine	Kidney	-18	-	<3 (unstable)	data not reliable
Bovine	Milk	-18	18-19	3	-
Hen	Egg	-18	18-19	-	-
Bovine	fat	-18	-	<3 (unstable)	-

Cyprodinil is stable for 18-19 months at -18°C in liver, milk and eggs. The storage stability study on cyprodinil was not reliable in muscle because of freezer issues and observed decline beyond 30%. The metabolite CGA304075 is stable only in milk during 3 months as a free form freshly spiked. And based on the ruminant metabolism study, the incurred metabolite CGA304075 is stable only 2 months in liver. Pending the necessity of a new feeding study to support a higher dietary burden in future, the issue on storage stability data for metabolite CGA304075 in liver might have to be reconsidered, including considerations on data for kidney should sufficient storage stability in liver not be given.

Summary of residues data from the supervised residue trials (Regulation (EU) N° 283/2013, Annex Part A, point 6.3) OECD Guideline 509, OECD Guidance, series on pesticides No 66 and OECD MRL calculator

Crop	Region/ Indoor (a)	Residue levels (mg/kg) observed in the supervised residue trials relevant to the supported GAPs (b)	Recommendations/comments (OECD calculations)	MRL proposals (mg/kg)	HR (mg/kg) (c)	STMR (mg/kg) (d)
Representative uses						
Pome fruits	NEU (1)	0.41	NEU data set not sufficient to derive an MRL	/	/	/
	SEU (5)	0.04; 0.10; 0.12; 0.22; 0.61	No data are available on the levels of the metabolite CGA232449 (free and conjugates) in apple. Values are for cyprodinil residues only. **Data gap**: Seven additional NEU and three additional SEU GAP compliant residue trials on apples	**1.5** (tentative)	0.61	0.12
Barley grain	NEU (7)	0.26; 0.29; 0.43; 0.61; 0.79; 0.88; 0.92	According to the Student test 5% and Mann-Withney U-test (α=5%), residue levels in southern trials are not different from the northern ones. MRL, HR and STMR can be derived from the merged dataset. **Data gap**: One additional residue trial on barley each, compliant with the NEU and SEU GAP, respectively	**3** (tentative)	2.2	0.765
	SEU (7)	0.01; 0.38; 0.74; 1; 2x1.1; 2.2				
Barley straw	NEU (7)	0.16. 0.17. 0.55. 0.61. 0.96. 1.30. 1.50	/	Not necessary	1.5	0.61
	SEU (7)	0.45. 0.56. 0.61. 1.34. 1.80. 2.60. 2.70	/	Not necessary	2.7	1.34

Summary of the data on formulation equivalence OECD Guideline 509						
Crop	**Region**	**Residue data** (mg/kg)	**Recommendations/comments**			
No information provided and not requested						

Summary of data on residues in pollen and bee products (Regulation (EU) No 283/2013, Annex Part A, point 6.10.1)

Crop	Region/ Indoor (a)	Residue levels (mg/kg) observed in the supervised residue trials relevant to the supported GAPs (b)	Recommendations/comments (OECD calculations)	MRL proposals (mg/kg)	HR (mg/kg) (c)	STMR (mg/kg) (d)
Data gap: Determination of the residues in pollen and bee products for human consumption resulting from residues taken up by honeybees from crops at blossom is required as uptake and translocation of cyprodinil residues throughout the plants was demonstrated to occur from the available plant metabolism studies.						

(a): **NEU** or **SEU** for northern or southern **outdoor** trials in EU member states (**N+SEU** if both zones), **Indoor** for glasshouse/protected crops, **Country** if non-EU location.

(b): Residue levels in trials conducted according to GAP reported in ascending order (*e.g.* 3x <0.01, 0.01, 6x 0.02, 0.04, 0.08, 3x 0.10, 2x 0.15, 0.17). When residue definition for monitoring and risk assessment differs, use **Mo/RA** to differentiate data expressed according to the residue definition for **Mo**nitoring and **R**isk **A**ssessment.

(c): **HR**: Highest residue. When residue definition for monitoring and risk assessment differs, HR according to residue definition for monitoring reported in brackets (HR_{Mo}).

(d): **STMR:** Supervised Trials Median Residue. When residue definition for monitoring and risk assessment differs, STMR according to definition for monitoring reported in brackets ($STMR_{Mo}$).

Inputs for animal burden calculations

Feed commodity	Median dietary burden		Maximum dietary burden	
	(mg/kg)	**Comment**	(mg/kg)	**Comment**
Representative uses (row to be deleted if not relevant)				
Apple, wet pomace	0.468 (0.12 x 3.9) PF=3.9	STMRp (STMR x PF)	0.468 (0.12 x 3.9)	STMRp (STMR x PF)
Barley grain	0.765	STMR	0.765	STMR
Barley straw	1.34	STMR	2.7	HR

Residues from livestock feeding studies (Regulation (EU) N° 283/2013, Annex Part A, points 6.4.1, 6.4.2, 6.4.3 and 6.4.4)
OECD Guideline 505 and OECD Guidance, series on pesticides No 73

MRL calculations	**Ruminant**				**Pig/Swine**		**Poultry**		**Fish**	
Highest expected intake (mg/kg bw/d) (mg/kg DM for fish)	Beef cattle	0.038	Ram/Ewe	0.073	Breeding	0.016	Broiler	0.043	Carp	-
	Dairy cattle	0.053	Lamb	0.093	Finishing	0.021	Layer	0.067	Trout	-
							Turkey	0.031	Fish intake >0.1 mg/kg DM	
Intake >0.004 mg/kg bw	Yes		Yes		Yes		Yes		Yes/No	
Feeding study submitted									No data submitted	
Representative feeding level (mg/kg bw/d, mg/kg DM for fish) and **N rates**	Level 0.063 mg/kg bw	Beef: 1.7N Dairy:1.2N	Level 0.063 mg/kg bw	Lamb: 0.7 N Ewe: 0.9N	Level 0.063 mg/kg bw	Breeding: 3.9N	Level	B or T: N Layer: N	Level	N rate Carp/Trout
	Estimated HR[(a)] at 1N	**MRL proposals**	Estimated HR[(a)] at 1N	**MRL proposals**	Estimated HR[(a)] at 1N	**MRL proposals**	Estimated HR[(a)] at 1N	**MRL proposals**	Estimated HR[(a)] at 1N	**MRL proposals**
Muscle	0.02	0.02*	0.02	0.02*	0	0.02*	-	-	-	-
Fat	0.02	0.02*	0.02	0.02*	0	0.02*	-	-	-	-
Meat[(b)]	0.02		0.02		0		-			
Liver	0.015	0.02*	0.021	0.02	0.001	0.02*	-	-		
Kidney	0.014	0.02*	0.021	0.03	0.002	0.02*	-	-		
Milk[(a)]	0.02	0.02*	0.02	0.02*						
Eggs							-	-		
Method of calculation[(c)]							Feeding data not submitted Considering the maximum dietary burden in poultry of 0.067 mg/kg and the metabolism data, no residues above the LOQ of 0.01 mg/kg is expected in poultry products, including muscle, fat, eggs, liver and kidney.			

(a): Estimated HR calculated at 1N level (**estimated mean level for milk**).
(b): HR in meat calculated for mammalian on the basis of 20% fat + 80% muscle and 10% fat + 90% muscle for poultry
(c): The OECD guidance document on residues in livestock (series on pesticides 73) recommends three different approaches to derive MRLs for animal products; by applying a transfer factor (Tf), by intrapolation (It) or by linear regression (Ln). Fill in method(s) considered to derive the MRL proposals.

Conversion Factors (CF) for monitoring to risk assessment

/

Processing factors (Regulation (EU) N° 283/2013, Annex Part A, points 6.5.2 and 6.5.3)

OECD Guideline 508 and OECD Guidance, series on testing and assessment No 96

Crop (RAC)/Edible part or Crop (RAC)/Processed product	**Number of studies[(a)]**	**Processing Factor** (PF)		**Conversion Factor** (CF_P) **for RA[(b)]**
		Individual values	Median PF	
Representative uses				
Apple, washed fruit	1	0.93	0.9	/
Apple, wet pomace	1	3.87	3.9	/
Apple, dry pomace	4	5.93, 9.2,12.03, 8.17	8.7	/
Apple, raw juice	1	01	0.1	/
Apple, pasteurised juice	4	4x0.07	0.07	/
Apple, sieved puree	4	4x0.17	0.17	/
Apple, puree	4	2x0.02, 0.27, 0.23	0.23	/
Barley, malt (all types)	15	0.88, 0.94, 1, 1.05, 2x1.11,1.14, 1.17, 1.33, 2x1.4, 1.52, 1.53, 1.97, 1.68	1.17	/
Barley, wort (all types)	12	2x0.01, 0.02, 0.04, 0.05, 0.06, 0.08, 2x0.11, 0.2, 0.22, 0.33	0.07	/
Barley, beer	12	2 x 0.01, 2 x0.02, 2 x 0.03, 2 x 0.04, 0.05, 0.06, 0.1, 0.11	0.04	/
Barley, pearling dust	4	2.30, 1.53, 2.67, 1.18	1.92	/
Barley, pearl barley	4	0.35, 0.41, 0.67,1.00	0.54	/

(a): Studies with residues in the RAC at or close to the LOQ should be disregarded (unless concentration)

(b): When the residue definition for risk assessment differs from the residue definition for monitoring

Consumer risk assessment (Regulation (EU) N° 283/2013, Annex Part A, point 6.9)

Including all uses (representative uses and uses related to an MRL application).

Note: Pending finalisation of the residue definitions for risk assessment in fruit, cereal/grass crops and rotational crops, availability of additional residue trials in apple and barley according to the residue definition for risk assessment, availability of the rotational crop residue trials analysing for metabolites NOA422054 and CGA321915 and data addressing the toxicity of pertinent metabolites, the consumer risk assessment is considered **provisional**

ADI	0.03 mg/kg bw per day
TMDI according to EFSA PRIMo rev. 3.1	Highest: 64 % ADI (DE child)
NTMDI, according to (to be specified)	Not provided, not required
NEDI (% ADI), according to (to be specified)	Not provided, not required
Factors included in the calculations	/
ARfD	2 mg/kg bw
IESTI (% ARfD), according to EFSA PRIMo rev. 3.1	Highest IESTI for children: 3 % ARfD (Apples)

	0,8 % ARfD (Barley) 0,1 % ARfD (Milk: Cattle) Highest IESTI for adult: 0,9% ARfD (Apples) 0,7% ARfD (Barley) 0,04% ARfD (Milk: Cattle) Highest IESTI for children (processed commodities): 4 % ARfD (Apples/juice) 0,4 % ARfD (Barley/cooked) 0,2 % ARfD (Barley/miling) Highest IESTI for adult (processed commodities): 2% ARfD (Apples/juice) 0,8% ARfD (Barley/beer)
NESTI (% ARfD), according to (to be specified)	Not provided, not required
Factors included in IESTI and NESTI	/

Proposed MRLs (Regulation (EU) No 283/2013, Annex Part A, points 6.7.2 and 6.7.3)

Code[(a)]	Commodity/Group	MRL/Import tolerance[(b)] (mg/kg) and Comments	
Plant commodities			
Representative uses			
0130010	Apple	1.5	Tentative. Based on 5 SEU trials only
0500010	Barley	3	Tentative. Based on 7 NEU and 7 SEU trials only
Animal commodities			
1012010	Bovine muscle	0.02*	
1012020	Bovine Fat	0.02*	
1012030	Bovine liver	0.02*	
1012040	Bovine kidney	0.02*	
1020010	Cattle Milk	0.02*	
1013010	Sheep muscle	0.02*	
1013020	Sheep fat	0.02*	
1013030	Sheep liver	0.02	
1014040	Sheep kidney	0.03	
1020020	Sheep milk	0.02*	
1011010	Swine muscle	0.02*	
1011020	Swine fat	0.02*	
1011030	Swine liver	0.02*	
1011040	Swine kidney	0.02*	

(a): Commodity code number, as listed in Annex I of Regulation (EC) No 396/2005
(b): MRLs proposed at the LOQ, should be annotated by an asterisk (*) after the figure.

**FSSE: Florida summer sunlight equivalent*

Environmental fate and behaviour

Route of degradation (aerobic) in soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.1)

Mineralisation after 100 days	***Phenyl** : 2.6-24.7 (110-363 d), 5 soils* ***Pyrimidyl** : 1 – 24.4 % (120-366 d), 9 soils*
Non-extractable residues after 100 days	***Phenyl** : 28.672.7 % (/120- 71 d), 5 soils* ***Pyrimidyl** : 25. 71.0% (120-139 d), 9 soils*
Metabolites requiring further consideration - name and/or code, % of applied (range and maximum)	***CGA249287**: max. 14.33 % (180 d, surface application)* ***CGA321915**: max 6.0 % (120 d)* ***CGA275535**: max. 10.4 % (14 d)* Sterile conditions: 86.3% cyprodinil remaining after 90d (n= 1)

Route of degradation (anaerobic) in soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.2)

Mineralisation after 100 days	***Phenyl** : 1.65 % (61 d of anaerobia), n=1* ***Pyrimidyl** : 0.55-1.56% (62-74 d of anaerobia), n=2*
Non-extractable residues after 100 days	***Phenyl** : 27.95 % (89 d of anaerobia), n=1* ***Pyrimidyl** :15.5-33.1% (62-104 d of anaerobia), n=2*
Metabolites that may require further consideration for risk assessment - name and/or code, % of applied (range and maximum)	*No single metabolite exceeded 10% AR at any simple time, nor 5% in two succeeding samples in anaerobic conditions.*

Route of degradation (photolysis) on soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.3)

Metabolites that may require further consideration for risk assessment - name and/or code, % of applied (range and maximum)	*CGA249287 : max 7.0 % AR after 42 d under light exposure*
Mineralisation at study end	***Phenyl**:4.6-4.9% (27.7-38.5 d FSSE*), n=2* *4.84 (42 d under light exposure)* ***Pyrimidyl**:2.3% (40.7 d FSSE), n=1* *0.6-2.4 % (15-42 d under light exposure), n=2*
Non-extractable residues at study end	***Phenyl**:17.9-25.3% (27.7-38.5 d FSSE), n=2* *22.9% (42 d under light exposure)* ***Pyrimidyl**: 31.1 % (40.7 d FSSE), n=1* *15.6-17.6% (15-28 d under light exposure), n=2*

Rate of degradation in soil (aerobic) laboratory studies active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

Parent CGA219417	**Dark aerobic conditions**									
Soil type	*Study*	pH[a]	t. °C / % MWHC	Data not normalized				Normalized to 20 °C pF2		
				DT_{50} (d)	DT_{90} [d]	St. (χ^2)	Method of calculation	DT_{50} (d) 20 °C pF2/10kPa[b,c]	St. (χ^2)	Method of calculation
Silt Loam – Les Evouettes	Schaeffer, 1992	7.2*	20/75%FC	25.4 k1: 0.02731 ; k2: 0.004388 ; tb: 55.58	234	3.67	HS	23.23[d]	7.38	SFO
Loamy Sand - Collombey	Schaeffer, 1993	7.7	20/40%	24.1 k1: 0.04314 ; k2: 0.02052 ; tb: 8.798	103	3.85	HS	19.54	6.84	SFO
Loamy Sand - Neuhofen	Schaeffer, 1994	6.0*	20/40%	34.0	113.0	8.66	SFO	27.50[d]	8.84	SFO
Sandy Loam – Strassenacker		7.9	20/40%	29.7	98.8	3.40	SFO	20.19	3.4	SFO
Loamy Sand - Collombey	Kitschmann, 1994a	7.7	19.5/40%	42.7	141.8	3.69	SFO	19.18	3.69	SFO
Silt Loam – Les Evouettes	Kitschmann, 1994b	7.8	19.5/40%	19.7 α: 1.4411; β: 31.8989	125.7	6.76	FOMC	30.93	10.46	SFO
Silt Loam – Les Evouettes – 30%	Mamouni, 1994	8.1	20/30%	57.6	191.4	1.96	SFO	18.66	1.96	SFO
Silt Loam – Les Evouettes – 60%		8.1	20/60%	26.7	88.6	3.18	SFO	24.80	3.18	SFO
Sandy clay loam - 18 Acres	Yeomans, 2015	*5.8*	20/pF2	218.94 k1: 0.1997 ; k2: 0.002429 ; g: 0.149	881.52	1.59	DFOP	206.61	4.26	SFO
Silt loam - Krone		*6.7*	20/ pF2	39.03	129.64	4.19	SFO	24.53	4.19	SFO
Silt loam - Sarpy		*6.6*	20/ pF2	148.39 k1: 0.177 ; k2: 0.003115; g: 0.2063	665.14	1.38	DFOP	151.38	5.93	SFO
Silt loam - Hepler		*5.9*	20/ pF2	210.08 k1: 0.02095 ; k2: 0.002412 ; tb: 10.06	877.48	3.02	HS	201.57	5.46	SFO
pH dependence, Yes or No								Yes		

[a] Measured in water except where * (medium unknown)
[b] Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7
[c] $DT_{90}/3.32$ for FOMC kinetics / k_2 for DFOP and HS kinetics

[d] degradation of CGA219417 is pH dependant, therefore soils were pH matrix was not known were not considered in the geomean calculations

Rate of degradation in soil (aerobic) laboratory studies transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

CGA249287	Dark aerobic conditions The precursor from which the f.f. was derived was *cyprodinil*										
Soil type	*Study*	pH[a]	t. °C / % MWHC	Data not normalized				Normalized to 20 °C pF2			
				DT_{50} / (d)	DT_{90} [d]	St. (χ^2)	Method of calculation	DT_{50} (d) 20 °C pF2/10kPa[b]	f. f. k_f / k_{dp} [b]	St. (χ^2)	Method of calculation
Silt Loam – Les Evouettes	Schaeffer,1992	7.2 *	20/75%FC	64.7	215	17	SFO	32.77	0.163	20.8	SFO
Loamy Sand – Collombey	Schaeffer,1993	7.7	20/40%	45.8	152	4	SFO	27.67	0.244	7.8	SFO
Loamy Sand – Neuhofen	Schaeffer, 1994	6.0 *	20/40%	58.4	194.1	14	SFO	44.59	0.239	14.4	SFO
Sandy Loam – Strassenacker		7.9	20/40%	61.2	203.3	7	SFO	41.45	0.228	7.4	SFO
Silt Loam – Les Evouettes – 60%	Mamouni, 1994	8.1	20/60%	25.8	84.7	23	SFO	18.04	0.122	23.3	SFO
Sandy clay loam – 18 Acres	Yeomans,2015	5.8	20/pF2	33.24	-	9.29	SFO	33.24	0.277	18.8	SFO
Silt loam - Krone		6.7	20/ pF2	63.69	211.6	15.7	SFO	63.69	0.256	15.7	SFO
Silt loam - Sarpy		6.6	20/ pF2	40.72	-	11	SFO	40.72	0.321	16.6	SFO
Silt loam - Hepler		5.9	20/ pF2	27.06	-	14	SFO	27.06	0.357	21.1	SFO
Geometric mean (if not pH dependent), n=9								**34.6**			
Arithmetic mean									**0.245**		
pH dependence, *Yes or No*								No			

[a] Measured in water except where * (medium unknown)
[b] Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7

CGA321915	Dark aerobic conditions The precursor from which the f.f. was derived was CGA249287										
Soil type	*Study*	pH[a]	t. °C / % MWHC	Data not normalized				Normalized to 20 °C pF2			
				DT_{50}/ (d)	DT_{90}	St. (χ^2)	Method of calculation	DT_{50} (d) 20 °C pF2/10kPa[b]	f. f. k_f / k_{dp} [b]	St. (χ^2)	Method of calculation
Silt Loam – Les Evouettes	Schaeffer, 1992	7.2 *	20/75%FC	72.1	239	30	SFO	84.68	0.560	31.9	SFO
Loamy Sand - Collombey	Schaeffer, 1993	7.7	20/40%	184	611	15	SFO	147.46	0.296	12.6	SFO

CGA321915	Dark aerobic conditions The precursor from which the f.f. was derived was CGA249287										
Soil type	*Study*	pH[a]	t. °C / % MWHC	Data not normalized				Normalized to 20 °C pF2			
				DT_{50}/ (d)	DT_{90}	St. (χ^2)	Method of calculation	DT_{50} (d) 20 °C pF2/10kPa[b]	f. f. k_f / k_{dp} [b]	St. (χ^2)	Method of calculation
Loamy Sand - Neuhofen	Schaeffer, 1994	6.0 *	20/40%	26.3	87.3	12	SFO	20.07	1	11.7	SFO
Sandy Loam – Strassenacker		7.9	20/40%	34.5	114.5	13	SFO	23.34	1	13.1	SFO
Silt loam - Krone	*Yeomans,2015*	*6.7*	20/ pF2	1000 (fixed)	-	58.4	SFO	-	-	-	SFO
Geometric mean (if not pH dependent), n=4								**49.2**			
Arithmetic mean									**0.715**		
pH dependence, *Yes or No*								No			

[a] Measured in (medium unknown)
b Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7

CGA275535	Dark aerobic conditions - Metabolite dosed study										
Soil type	*Study*	pH[a]	t. °C / % MWHC	Data not normalized				Normalized to 20 °C pF2			
				DT_{50}/ DT_{90} (d)	DT_{90} [d]	St. (χ^2)	Method of calculation	DT_{50} (d) 20 °C pF2/10kPa[b]	f. f. k_f / k_{dp} [b]	St. (χ^2)	Method of calculation
Sandy loam - Schanz	Volkel, 2001	7.4	20°C/40%	0.57 α: 0.9212; β: 0.50509	5.65	5.41	FOMC	0.91	-	21.0	SFO
Sandy loam - Pappelacker		7.5	20°C/40%	0.35 $k_{1:}$ 2.163; $k_{2:}$ 0.0207; g: 0.0575	1.41	4.95	DFOP	0.40	-	15.9	SFO
Silt loam - Senozan		5.8	20°C/40%	0.24 α: 0.67748; β: 0.13892	4.02	7.31	FOMC	0.57	-	22.0	SFO
pH dependence, *Yes or No*								No			

[a] Measured in (medium unknown)
b Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7

Rate of degradation field soil dissipation studies (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.2.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.2.1)

Parent		Aerobic conditions								
Soil type (indicate if bare or cropped soil was used).	Location (country or USA state).	pH[a)]	Depth (cm)	DT_{50} (d) actual	DT_{90}(d) actual	St. (χ^2)	Method of calculation	DT_{50} (d) Norm[b)].	St. (χ^2)	Method of calculation
Loam	Livingston	6.4	0-30	60.1	200	19.1	SFO	65.4	21.7	SFO
Sandy loam	Sanger	7.3	0-30	8.48 k_2 DT_{50}:20.8	56.8	5.8	DFOP	37.0	10.1	SFO
Sandy loam	Altratjensdorf [GB30193]	6.1*	0-30	88	292	21.4	SFO	15.6	13.9	HS (k_2)
Silt loam	Wallersdorf	6.8*	0-30	35.8	119	22.8	SFO	17.6	17.8	SFO
Sandy loam	Altratjensdorf [GB23738]	6.2*	0-30	-	-			-	-	-
Silt loam	Uhrsleben	6.2*	0-30	-	-			-	-	-
Sandy loam	Herxheimweyher	6.8*	0-30	3.49 (k_2 DT_{50}: 28.2)	54.6	7.93	DFOP	27.9	17.5	SFO
loamy sand	Coesfeld	4.9*	0-30	192	636	12.3	SFO	160	13.6	SFO
Silt loam	Buleon (Northern FR)	4.9	0-30	131.98	438.42	15.4	SFO	126	3.93	SFO
Silty clay	Ploermel (Northern FR)	4.9	0-30	106.96	355.31	22.6	SFO	137	17.9	SFO
loamy sand	Appel-Oldendorf (GE)	5.7	0-30	100.65	334.35	17.9	SFO	97.8	21.4	SFO
Clay loam	Osterhofen-Gergweis (GE)	5.3	0-30	284.29	944.39	15.2	SFO	290	18.4	SFO
pH dependence								Yes		

a) Measured in water or $CaCl_2$ (indicated with a *)

b) Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7, values are DegT50matrix

Combined laboratory and field kinetic endpoints for modelling (when not from different populations)*

CGA219417: degradation in soil is pH dependant. Field and laboratory degradation rates were still compared considering a first set of degradation rates for soils with pH_{H2O} <6.7 and a second set for soils with $pH_{H2O} \geq 6.7$.

Origin	Study Reference	Soil	pH_{H2O}	DT_{50} [d]
Soils with $pH_{(H2O)} < 6.7$				
Field	Marshall 2009a	Buleon	4.9	126
Field	Marshall 2009b	Ploermel	4.9	137
Field	Simon 2009b	Osterhofen-Gergweis	5.3	290
Field	Smith 1997b	Coesfeld	5.5	160
Field	Simon 2009a	Appel-Oldendorf	5.7	97.8
Lab	Yeomans 2015	18 Acres	5.8	206.61
Lab	Yeomans 2015	Hepler	5.9	201.57
Lab	Yeomans 2015	Sarpy	6.6	151.38

Origin	Study Reference	Soil	pH_{H2O}	DT_{50} [d]
Soils with $pH_{(H2O)} \geq 6.7$				
Field	Smith 1997a	Altratjensdorf [GB30193]	6.7	15.6
Lab	Yeomans 2015	Krone	6.7	24.53
Field	Sandberg 1995	Sanger	7.3	37.5
Field	Smith 1997a	Wallersdorf	7.3	17.6
Field	Smith 1997b	Herxheimweyher	7.3	27.9
Lab	Schaeffer 1993	Collombey	7.67	19.54
Lab	Kitschmann 1994a	Les Evouettes	7.67	19.18
Lab	Kitschmann 1994b	Collombey	7.76	30.93
Lab	Schaeffer 1994	Strassenacker	7.85	20.19

	Lab	Mamouni 1994	Les Evouettes	8.1	21.51

All soils with pH matrix unknown or where no kinetics could be fitted are not reported above.

Rate of degradation in soil active substance, normalised geometric mean (if not pH dependent)	soils with pH $_{H2O}$ < 6.7 : field and lab data are significantly different. The recommended endpoint is therefore the geomean field DT_{50} (150.9 d, n=5) soils with pH $_{H2O}$ ≥ 6.7 : lab and field data are not significantly different. The recommended geomean DT_{50} is 22.64 d (n=10)
Rate of degradation in soil transformation products, normalised geometric mean (if not pH dependent)	No field data for metabolites
Kinetic formation fraction (f. f. k_f / k_{dp}) of transformation products, arithmetic mean	No field data for metabolites

* Only relevant after implementation of the published EFSA guidance describing how to amalgamate laboratory and field endpoints.

Soil accumulation (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.2.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.2.2)

Soil accumulation and plateau concentration	Switzerland (2 sites, pH 7.7-8.2) Cereals (2/3x750 g/ha, 4 years) Cyprodinil : < 0.01 mg/kg 117-143 DALA CGA 248287 : <0.01-0.01 mg/kg 117-143 DALA Orchard (6x225 g/ha, 7 years) Cyprodinil : < 0.01-0.07 mg/kg , 1 year after 6th appl. CGA249287 : <0.01-0.01 mg/kg , 1 year after 6th appl. Plateau concentration is calculated (DT_{50} in lab/field studies above one year)

Rate of degradation in soil (anaerobic) laboratory studies active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.3 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

Parent	Dark anaerobic conditions					
Soil type	pH[a)]	t. ºC / % MWHC	DT_{50} / DT_{90} (d)	DT_{50} (d) - 20 °C[b)]	St. (χ^2)	Method of calculation
No available data – stable in anaerobic conditions						

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

Rate of degradation on soil (photolysis) laboratory active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.3

Parent	Soil photolysis				
Soil type	pH[a)]	t. ºC / % MWHC	DT_{50} / DT_{90} (d)	St. (χ^2)	Method of calculation
No available data					

[a)] Measured in [medium to be stated, usually calcium chloride solution or water]

Soil adsorption active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.3.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Parent							
Soil Type	OC %	Soil pH[a)]	K_d (mL/g)	K_{doc} (mL/g)	K_F (mL/g)	K_{Foc} (mL/g)	1/n
SL-Ca	0.81	5.6			16.9	2098.1	0.8165
LS-Ga	0.81	6.7			14.4	1793.7	0.7868
10B	2.03	7.3			32	1593	0.8328
19B	1.51	7.0			25	1678.5	0.8735
Geometric mean (n=4)						**1781.1**	
Arithmetic mean (n=4)							**0.827**
pH dependency			No				

[a] Measured in water

Soil adsorption transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.3.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

CGA249287							
Soil Type	OC %	Soil pH[a)]	K_d (mL/g)	K_{doc} (mL/g)	K_F (mL/g)	K_{Foc} (mL/g)	1/n
SL-Ca	0.804	5.6			5.23	650.5	0.6974
LS-Ga	0.804	6.7			6.957	865.3	0.7088
10B	2.01	7.3			3.475	172.9	0.7604
19B	1.49	7.0			3.867	240.4	0.7961
Sediment	0.172	8.6			0.31	180.2	0.8638
Geometric mean (n=5)						334.95	
Arithmetic mean (n=5)							0.752
pH dependency			No				

[a] Measured in water

CGA321915							
Soil Type	OC %	Soil pH[a)]	K_d (mL/g)	K_{doc} (mL/g)	K_F (mL/g)	K_{Foc} (mL/g)	1/n
SL-Ca	0.804	5.6			2.513	312.6	0.6603
LS-Ga	0.804	6.7			1.482	184.3	0.7515
10B	2.01	7.3			0.999	49.7	0.9038
19B	1.49	7.0			1.223	82.1	0.8198
Sediment	0.172	8.6			0.309	179.9	0.8291
Geometric mean (n=5)						133.4	
Arithmetic mean (n=5)							0.793
pH dependency			No				

[a] Measured in water

CGA275535							
Soil Type	OC %	Soil pH[a)]	K_d (mL/g)	K_{doc} (mL/g)	K_F (mL/g)	K_{Foc} (mL/g)	1/n
SL-Ca	0.804	5.6			59.426	7391.3	0.9483
LS-Ga	0.804	6.7			26.61	3309.7	0.7483
10B	1.55	6.8			31.879	2056.7	0.742
19B	1.15	6.7			33.299	2895.5	0.7318
Sediment	0.172	8.6			8.057	4684.5	0.8441
SL-Ca II	0.459	6.3			4.525	985.9	0.6983
Geometric mean (n=6)						2960.2	
Arithmetic mean (n=6)							0.785
pH dependence			No				

[a] Measured in water

Mobility in soil column leaching active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.4.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Column leaching	Elution (mm): 200 mm Time period (d): 2 d
	Leachate: <0.03 % total residues/radioactivity in leachate >99 % active substance, >90 % total residues/radioactivity retained in top 2 cm Koc (mL/g) = >1725

Mobility in soil column leaching transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.4.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Column leaching	Elution (mm): 200 mm Time period (d): 2 d
	Leachate: 0.13-0.23 % total residues/radioactivity in leachate 0-0.14% active substance, 5.7-7.3 % CGA249287, 0.005-0.037 % carbonates, 0.09-0.14% polar degradation products, >90 % total residues/radioactivity retained in top 2 cm Koc (mL/g) =(When it has not been possible to determine it by batch sorption experiments).
	Elution (mm): 508 mm Time period (d): 40 d
	Leachate: 0.62-1.36 % total residues/radioactivity in leachate 0-0.125% active substance, CGA249287 0.17 % carbonates 0.022-0.185%, polar degradates 0.73-1.24% >86 % total residues/radioactivity retained in top 4 cm Koc (mL/g) =(When it has not been possible to determine it by batch sorption experiments).

Lysimeter / field leaching studies (Regulation (EU) N° 283/2013, Annex Part A, points 7.1.4.2 / 7.1.4.3 and Regulation (EU) N° 284/2013, Annex Part A, points 9.1.2.2 / 9.1.2.3)

Lysimeter/ field leaching studies	Not required

Hydrolytic degradation (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.1.1

Hydrolytic degradation of the active substance and metabolites > 10 %	pH 4: 5d at 50 °C stable CGA249287: 5d at 50 °C stable CGA275535: 10d at 50 °C stable
	pH 5: 5d at 50 °C stable; 32d at 25°C stable CGA249287: 5d at 50 °C stable CGA275535: 10d at 50 °C stable
	pH 7: 5d at 50 °C stable; 32d at 25°C stable CGA249287: 5d at 50 °C stable CGA275535: 10d at 50 °C stable
	pH 9: 5d at 50 °C stable; 32d at 25°C stable CGA249287: 5d at 50 °C stable CGA275535: 10d at 50 °C stable

Aqueous photochemical degradation (Regulation (EU) N° 283/2013, Annex Part A, points 7.2.1.2 / 7.2.1.3)

Photolytic degradation of active substance and metabolites above 10 %	* pH4 - **DT_{50} : 22.4 d** summer sunlight equivalent Natural light,30 -50°N (ca.10 day lag phase) CGA249287 16.6 %AR Phe U2: 6.9% AR Succinic acid (R008591): 8.5% AR Guanidine (CGA048109): 5.9% AR Phe U4: 5.9% AR Phe U6: 9.1% AR pH 6-6.5 (bidistilled water): DT_{50} (30°N): 21.5-68.3 Florida summer sunlight d, with lag phase of 0-72h * pH 7.3: DT50: 17 d (midsummer time 40° N) b - 19 d (midsummer time 50° N). pH 8.9 (natural water) – CGA249287, CGA321915, CGA272749, CGA232167 detected; polar fraction 50.5% - contains CGA263208. pH 9 : **no calculated DT_{50} (lag phase 8-10 d)** CGA249287: 16.1% AR (10d); guanidine: 26.0 % AR (30d); succinic acid: 13.7% AR (30 d); Natural water - **DT_{50} : 10.6 d** summer sunlight equivalent Natural light, 30-50°N guanidine: 20.8 % AR (30 d), phenyl guanidine: 10.2 % AR (30 d); **CGA249287** pH 5-9 estimated DT_{50} at 30-50°N *15.5-31.9* days
Quantum yield of direct phototransformation in water at Σ > 290 nm	*CGA219417: 0.1* · 10^{-3} mol · Einstein $^{-1}$ at pH7 CGA249287: 9.295· 10^{-3} mol · Einstein $^{-1}$ at pH 7.6 CGA275535: 0.034 · 10^{-3} mol · Einstein $^{-1}$ at pH 7.2

‘Ready biodegradability’ (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.1)

Readily biodegradable (yes/no)	No

Aerobic mineralisation in surface water (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.2.1)

Parent (CGA219417)						
System identifier	pH $CaCl_2$ water phase	T °C[a]	DT_{50} /DT_{90} whole sys. (suspended sediment test)	DT_{50} water pelagic test)	St. (χ^2)	kinetics
Fresh water Phe/Pyr 10µg/L	8.6	20	NA	146	2.8655	SFO
Fresh Water Phe/Pyr 95µg/L	8.6	20	NA	298	1.316	SFO

[a] Temperature of incubation
NA = not applicable

Water / sediment study (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.3 and Regulation (EU) N° 284/2013, Annex Part A, point 9.2.2)

Parent	Distribution (*max. sed 87.3 % after 21*)								
Water / sediment system	**pH water phase**	**pH sed** a)	**t. °C**	**DT_{50} /DT_{90} whole sys. (persistence*)**	**St. (χ^2)**	**DT_{50} /DT_{90} Water (persistence*)**	**St. (χ^2)**	**DT_{50} /DT_{90} whole sys. (modelling)**	**St. (χ^2)**
Rhine (River system) Phenyl label **Morgenroth and Völkel (1994)**	8.2	7.0	20	129 (SFO)	8.8	4.1 (FOMC)[b]	4.2	129 (SFO)	8.8
Rhine (River system) Pyrimidyl label **Morgenroth (1994)**	8.2	7.0	20	160 (HS) k_1: 0.0073 k_2: 0.0029 tb: 52.47	5.6	8.5 (DFOP)[b]	1.2	159 (SFO)	6.7
Froschteich (Pond system) Phenyl label **Morgenroth and Völkel (1994)**	7.7	6.5	20	165 (SFO)	8.0	4.2 (FOMC)[b]	6.7	165 (SFO)	8.0
Froschteich (Pond system) Pyrimidyl label **Morgenroth (1994)**	7.7	6.5	20	194 (HS) k_1: 0.0065 k_2: 0.0028 tb: 40.51	3.4	9.4 (DFOP)[b]	3.2	188 (SFO)	4.5
Geometric mean at 20°C[b)]								158.8	

* POP/PBT/vPvB assessment
[a] Measured in KCl
[b] DT_{90}/3.32 (FOMC) – ln(2)/k_2 (DFOP)

Mineralisation and non extractable residues (from parent dosed experiments)					
Water / sediment system	pH water phase	pH sed	Mineralisation *x % at the end of the study*	Non-extractable residues in sed. *max x % after n d*	Non-extractable residues in sed. *max x % at the end of the study*
Rhine (River system)	8.2	7.0	11.1 % after 260 d	47.5% after 260 d	47.5% after 260 d
Froschteich (Pond system)	7.7	6.5	4.8 % after 260 d	47.7% after 260 d	47.7% after 260 d
Metabolite CGA249287 Distribution: max in water 6.9%AR after 112 d / max. sed 14.2 % after 112 d. max in total system 21.1 % AR after 112 days					

The only significant metabolite formed in the water sediment studies was CGA249287. An insufficient number of data points prevented an acceptable kinetic fit for this metabolite and so the default value of 1000d should be used. All other metabolites were less than 10% in aerobic conditions.

Fate and behaviour in air (Regulation (EU) N° 283/2013, Annex Part A, point 7.3.1)

Direct photolysis in air	Not studied - no data requested
Photochemical oxidative degradation in air	DT50 of 0.5-2.1 hours derived by the Atkinson model (OH (12 h) concentration assumed = $1.5.10^6$ cm^{-3}
Volatilisation	from plant surfaces (BBA guideline): *42* % after *24* h
	from soil surfaces (BBA guideline): *negligible*
Metabolites	-

Residues requiring further assessment (Regulation (EU) N° 283/2013, Annex Part A, point 7.4.1)

Environmental occurring residues requiring further assessment by other disciplines (toxicology and ecotoxicology) and or requiring consideration for groundwater exposure	Soil: Cyprodinil; CGA275535; CGA249287; *CGA321915* Surface water: Cyprodinil; CGA275535; CGA249287; *CGA321915; CGA048109; CGA263208 R008591.,* Sediment: Cyprodinil; CGA249287 Ground water: Cyprodinil; CGA275535; CGA249287; *CGA321915* Air: Cyprodinil

Definition of the residue for monitoring (Regulation (EU) N° 283/2013, Annex Part A, point 7.4.2)

	Cyprodinil

Monitoring data, if available (Regulation (EU) N° 283/2013, Annex Part A, point 7.5

Soil (indicate location and type of study)	Not required
Surface water (indicate location and type of study)	Not required
Ground water (indicate location and type of study)	Not required
Air (indicate location and type of study)	Not required

PEC soil (Regulation (EU) N° 284/2013, Annex Part A, points 9.1.3 / 9.3.1)

Application data	**Formulation:** A14325E **Crop**: barley **Depth of soil layer**: 5cm (actual) / 20cm (accumulation) **Soil bulk density**: 1.5g/cm^3 **% plant interception**: 80% **Application rate(s):** 450 g a.s./ha **Number of applications**: 2 (interval : 14 d)
Parent (CGA219417) Method of calculation	**DT50 (d)**: 284.3 days - worst case field studies (not normalized) **Kinetics**: SFO

PEC$_{(s)}$ (mg/kg)		Single application		Multiple application	
		Actual	**Time Weighted Average**	**Actual**	**Time Weighted Average**
Initial				0.236	
Short term	24h			0.235	0.236
	2d			0.235	0.235
	4d			0.235	0.235
Long term	7d			0.232	0.234
	28d			0.220	0.228
	50d			0.209	0.222
	100d			0.185	0.209
Plateau concentration (20cm)				**0.043 mg/kg after 14 yr**	

PEC(s) (mg/kg)	Single application		Multiple application	
	Actual	Time Weighted Average	Actual	Time Weighted Average
PEC accumulation (20cm and ultimate appl. in 5cm			**0.279 mg/kg after 14 yr**	0.272 (21 d)

CGA249287

Method of calculation	**Molecular weight**: 149.2 g/mol **Parent molecular weight**: 225.3 g/mol **DT_{50} (d):** 1000 days (representative worst case from lab studies) **Kinetics**: DFOP **Maximum occurrence in soil :** 14.3%

PEC(s) (mg/kg)	Single application		Multiple application	
	Actual	Time Weighted Average	Actual	Time Weighted Average
Initial			0.023	
Plateau concentration (20cm)			0.020 **mg/kg after 14 yr**	
PEC accumulation (20cm and ultimate appl. in 5cm)			0.043 **mg/kg after 14 yr**	

CGA321915

Method of calculation	**Molecular weight**: 150.2 g/mol **Parent molecular weight**: 225.3 g/mol **DT_{50} (d):** 1000 days (representative worst case from lab studies) **Kinetics**: DFOP **Maximum occurrence in soil :** 6.3%

PEC(s) (mg/kg)	Single application		Multiple application	
	Actual	Time Weighted Average	Actual	Time Weighted Average
Initial			0.010	
Plateau concentration (20cm)			**0.008 mg/kg after 14 yr**	
PEC accumulation (20cm and ultimate appl. in 5cm)			**0.018 mg/kg after 14 yr**	

CGA275535

Method of calculation	**Molecular weight**: 241.3 g/mol **Parent molecular weight**: 225.3 g/mol **DT_{50} (d):** 1.7 days (representative worst case from lab studies) **Kinetics**: FOMC **Maximum occurrence in soil :** 10.4%

PEC(s) (mg/kg)	Single application		Multiple application	
	Actual	Time Weighted Average	Actual	Time Weighted Average
Initial			0.027	
Plateau concentration (20cm)			-	
PEC accumulation (20cm and ultimate appl. in 5cm)			-	

Formulation: A8637C

Application data	**Crop**: Apple **Depth of soil layer**: 5cm **Soil bulk density**: 1.5g/cm^3 **% plant interception**: 60% **Application rate(s):** 375 g a.s./ha **Number of applications**: 3 (interval : 21 d)

Parent (CGA219417) Method of calculation	**DT50 (d)**: 284.3 days - worst case field studies (not normalized) **Kinetics**: SFO

PEC$_{(s)}$ (mg/kg)		Single application		Multiple application	
		Actual	**Time Weighted Average**	**Actual**	**Time Weighted Average**
Initial				0.571	
Short term	24h			0.569	0.570
	2d			0.568	0.569
	4d			0.565	0.568
Long term	7d			0.561	0.566
	28d			0.533	0.551
	50d			0.505	0.537
	100d			0.447	0.506
Plateau concentration (5cm)				**0.441 mg/kg after 16 yr**	
PEC accumulation (5cm)				**1.012mg/kg after 16 yr**	

CGA249287 Method of calculation	**Molecular weight**: 149.2 g/mol **Parent molecular weight**: 225.3 g/mol **DT$_{50}$ (d):** 1000 days (representative worst case from lab studies) **Kinetics**: DFOP **Maximum occurrence in soil :** 14.3%

PEC$_{(s)}$ (mg/kg)	Single application		Multiple application	
	Actual	**Time Weighted Average**	**Actual**	**Time Weighted Average**
Initial			0.056	
Plateau concentration (5cm)			0.180 **mg/kg after 16 yr**	
PEC accumulation (5cm)			0.236 **mg/kg after 16 yr**	

CGA321915 Method of calculation	**Molecular weight**: 150.2 g/mol **Parent molecular weight**: 225.3 g/mol **DT$_{50}$ (d):** 1000 days (representative worst case from lab studies) **Kinetics**: DFOP **Maximum occurrence in soil :** 6.0%

PEC$_{(s)}$ (mg/kg)	Single application		Multiple application	
	Actual	**Time Weighted Average**	**Actual**	**Time Weighted Average**
Initial			0.024	
Plateau concentration (5cm)			0.076 **mg/kg after 16yr**	
PEC accumulation (5cm)			0.100 **mg/kg after 16 yr**	

CGA275535

Method of calculation	**Molecular weight**: 241.3 g/mol **Parent molecular weight**: 225.3 g/mol **DT_{50} (d):** 1.7 days (representative worst case from lab studies) **Kinetics**: FOMC **Maximum occurrence in soil :** 10.4%

$PEC_{(s)}$ (mg/kg)	**Single application**		**Multiple application**	
	Actual	**Time Weighted Average**	**Actual**	**Time Weighted Average**
Initial			0.022	
Plateau concentration (5cm)			-	
PEC accumulation (5cm)			-	

PEC ground water (Regulation (EU) N° 284/2013, Annex Part A, point 9.2.4.1)

Method of calculation and type of study (*e.g.* modelling, field leaching, lysimeter)	Modelling using FOCUS model(s), with appropriate FOCUSgw scenarios, according to FOCUS guidance. Model(s) used: (**FOCUS-PEARL** (v 4.4.4), **FOCUS-PELMO** (v 5.5.3) and **FOCUS-MACRO** (v5.5.4)) Crop: Barley/Apple **Parent (CGA219417) *** Crop uptake factor: *0* Water solubility (mg/L): *20.0* at pH *5* and *25*°C Vapour pressure: *0* Pa at 20°C **Geometric mean DT_{50}** (pH < 6.7): 150.9 d (field data, normalized to pF2, 20°C with Q10 of 2.58 and Walker equation coefficient 0.7). **Geometric mean DT_{50}** (pH ≥ 6.7): 22.64 d (field and lab, normalized to pF2, 20°C with Q10 of 2.58 and Walker equation coefficient 0.7). K_{OC}:1781 mL/g geometric mean, n = 5 1/n: 0.827, arithmetic mean, n = 5 **CGA275535 *** Crop uptake factor: *0* Water solubility (mg/L): *20.0 (parent value)* at pH *5* and *25*°C Vapour pressure: *0* Pa at 20°C **Geometric mean DT_{50}** : 0.9 d (normalized to pF2, 20°C with Q10 of 2.58 and Walker equation coefficient 0.7). formation fraction*: 1 from CGA219417* K_{OC}: 2960.2mL/g (n=6), 1/n : 0.785 (n=6). **CGA249287 *** Crop uptake factor: *0* Water solubility (mg/L): *6900* at *25*°C

	Vapour pressure: *0* Pa at 20°C **Geometric mean DT_{50}** 34.6 d (lab, normalized to pF2, 20°C with Q10 of 2.58 and Walker equation coefficient 0.7) formation fraction*:* 0.245 from CGA219417 K_{OC}:334.95 mL/g geometric mean, 1/n: 0.752, arithmetic mean, **CGA321915 *** Crop uptake factor: *0* Water solubility (mg/L): *250 at 20*°C Vapour pressure: *0* Pa at 20°C **Geometric mean DT_{50}** 49.18 d (normalized to pF2, 20°C with Q10 of 2.58 and Walker equation coefficient 0.7). formation fraction: 0.715 from CGA249287 K_{OC}:133.4 mL/g geometric mean, n = 4 1/n: 0.793, arithmetic mean, n = 4
Application rate: A14325E	Application rate: *450* g/ha. Crop growth stage: *Spring and Winter barley BBCH 30-61* Canopy interception %: *80%* Application rate net of interception: *90* g/ha. No. of applications: *2 (interval: 14d)* Time of application

Use	Scenario	1st application	2nd application
Winter cereals, 2 x 450 g a.s./ha, BBCH 30-61	Châteaudun	21-Apr (111)	5-May (125)
	Hamburg	19-Apr (109)	3-May (123)
	Jokioinen	25-May (145)	8-June (159)
	Kremsmünst	19-Apr (109)	3-May (123)
	Okehampton	15-Apr (105)	29-Apr (119)
	Piacenza	10-Apr (100)	24-Apr (114)
	Porto	30-Mar (89)	13-Apr (103)
	Sevilla	6-Jan (6)	20-Jan (20)
	Thiva	2-Mar (61)	16-Mar (75)
Spring cereals, 2 x 450 g a.s./ha, BBCH 30-61	Châteaudun	10-Apr (100)	24-Apr (114)
	Hamburg	28-Apr (118)	12-May (132)
	Jokioinen	5-June (156)	19-June (170)
	Kremsmünst	28-Apr (118)	12-May (132)
	Okehampton	22-Apr (112)	6-May (126)
	Porto	16-Apr (106)	30-Apr (120)

Numbers in brackets are the corresponding Julian day numbers.

Application rate: A8637C	Gross application rate: *375*g/ha. Crop growth stage: *Early and Late pome BBCH 10-79* Canopy interception %: *60%* Application rate net of interception: *150* g/ha. No. of applications: *3 (interval: 21d)* Time of application (absolute or relative application dates):

Use	**Scenario**	**1st application**	**2nd application**	**3rd application**

Apples, 'early' period 3 x 375 g a.s./ha, BBCH 10-71	Châteaud	02-Apr (92)	23-Apr (113)	14-May (134)
	Hamburg	16-Apr (106)	07-May (127)	28-May (148)
	Jokioinen	11-May (131)	01-Jun (152)	22-Jun (173)
	Kremsmü	16-Apr (106)	07-May (127)	28-May (148)
	Okehamp	26-Mar (85)	16-Apr (106)	07-May (127)
	Piacenza	02-Apr (92)	23-Apr (113)	14-May (134)
	Porto	16-Mar (75)	06-Apr (96)	27-Apr (117)
	Sevilla	16-Mar (75)	06-Apr (96)	27-Apr (117)
	Thiva	16-Mar (75)	06-Apr (96)	27-Apr (117)
Apples, 'late' period 3 x 375 g a.s./ha, BBCH 10-71	Châteaud	03-Jun (154)	24-Jun (175)	15-Jul (196)
	Hamburg	02-May (122)	23-May (143)	13-Jun (164)
	Jokioinen	05-Jun (156)	26-Jun (177)	17-Jul (198)
	Kremsmü	02-May (122)	23-May (143)	13-Jun (164)
	Okehamp	07-Jun (158)	28-Jun (179)	19-Jul (200)
	Piacenza	14-Jun (165)	05-Jul (186)	26-Jul (207)
	Porto	03-Jul (184)	24-Jul (205)	14-Aug (226)
	Sevilla	09-Jun (160)	30-Jun (181)	21-Jul (202)
	Thiva	29-Jun (180)	20-Jul (201)	10-Aug (222)

Numbers in brackets are the corresponding Julian day numbers.

PEC(gw) - FOCUS modelling results (80th percentile annual average concentration at 1m)

Crop	Scenario	PEARL & PELMO - 80th Percentile PEC_{GW} at 1 m Soil Depth (µg/L)							
		Acidic conditions				Alkaline conditions			
		Parent (CGA 219417)	CGA 275535	CGA 249287	CGA 321915	CGA 219417	CGA 275535	CGA 249287	CGA 321915
Winter cereals, 2 x 450 g a.s./ha,	Châteaudun	< 0.001				< 0.001			
	Hamburg	< 0.001				< 0.001			
	Jokioinen	< 0.001				< 0.001			
	Kremsmünster	< 0.001				< 0.001			
	Okehampton	< 0.001				< 0.001			
	Piacenza	< 0.001				< 0.001			
	Porto	< 0.001				< 0.001			
	Sevilla	< 0.001				< 0.001			
	Thiva	< 0.001				< 0.001			
Spring cereals, 2 x 450 g a.s./ha,	Châteaudun	< 0.001				< 0.001			
	Hamburg	< 0.001				< 0.001			
	Jokioinen	< 0.001				< 0.001			
	Kremsmünster	< 0.001				< 0.001			
	Okehampton	< 0.001				< 0.001			
	Piacenza	< 0.001				< 0.001			
	Porto	< 0.001				< 0.001			
	Sevilla	< 0.001				< 0.001			

	Thiva	< 0.001	< 0.001

Use	Scenario	MACRO - PEC$_{GW}$ at 1 m soil depth [µg/L]							
		Parent (CGA 219417)		CGA275535		CGA249287		CGA321915	
		Acidic	Alkaline	Acidic	Alkaline	Acidic	Alkaline	Acidic	Alkaline
Winter cereals, 2 x 450 g a.s./ha,	Châteaudun	< 0.001				< 0.001			
Spring cereals, 2 x 450 g a.s./ha	Châteaudun	< 0.001				< 0.001			

PEC(gw) - FOCUS modelling results (80th percentile annual average concentration at 1m)

Crop	Scenario	PEARL & PELMO - 80th Percentile PEC$_{GW}$ at 1 m Soil Depth (µg/L)							
		Acidic conditions				Alkaline conditions			
		Parent (CGA 219417)	CGA 275535	CGA 249287	CGA 321915	Parent CGA 219417	CGA 275535	CGA 249287	CGA 321915
Apple, early 3 x 375 g a.s./ha,	Châteaudun	< 0.001				< 0.001			
	Hamburg	< 0.001				< 0.001			
	Jokioinen	< 0.001				< 0.001			
	Kremsmünster	< 0.001				< 0.001			
	Okehampton	< 0.001				< 0.001			
	Piacenza	< 0.001				< 0.001			
	Porto	< 0.001				< 0.001			
	Sevilla	< 0.001				< 0.001			
	Thiva	< 0.001				< 0.001			
Apple, late 3 x 375 g a.s./ha	Châteaudun	< 0.001				< 0.001			
	Hamburg	< 0.001				< 0.001			
	Jokioinen	< 0.001				< 0.001			
	Kremsmünster	< 0.001				< 0.001			
	Okehampton	< 0.001				< 0.001			
	Piacenza	< 0.001				< 0.001			
	Porto	< 0.001				< 0.001			
	Sevilla	< 0.001				< 0.001			
	Thiva	< 0.001				< 0.001			

Use	Scenario	MACRO - PEC$_{GW}$ at 1 m soil depth [µg/L]							
		Parent (CGA 219417)		CGA275535		CGA249287		CGA321915	
		Acidic	Alkaline	Acidic	Alkaline	Acidic	Alkaline	Acidic	Alkaline
Apple, early 3 x 375 g a.s./ha,	Châteaudun	< 0.001				< 0.001			
Apple, late 3 x 375 g a.s./ha	Châteaudun	< 0.001				< 0.001			

PEC surface water and PEC sediment (Regulation (EU) N° 284/2013, Annex Part A, points 9.2.5 / 9.3.1)

STEP 1-2

A14325E	Crop and growth stage: cereals BBCH 30-61 Number of applications: *2* Interval (d): *14* Application rate(s): *450* g a.s./ha **Region/timing**: North/South Europe – Mar-May & June-Sept **Crop interception** : *average canopy*
A8637C	Crop and growth stage: pome/stone fruits (early applications) BBCH 10-71 Number of applications: *3*

	Interval (d): *21* Application rate(s): *375* g a.s./ha **Region/timing**: North/South Europe – Mar-May & June-Sept **Crop interception** : *average canopy*

Parent (CGA219417)

Parameters used (step 1-2)	**Molecular weight (g/mol):**225.3 Water solubility: 20 (pH 5) **Kf_{OC} (mL/g):** 1718 * (geometric mean, n=4) **DT_{50} soil (d):** *184.73* * days *(*Acidic field normalized geomean*)* **DT_{50} system/water/sediment (d):** 158.8 d (geometric mean, whole system)

* Recommended geomean Kfoc is 1781.0 (n=5) with mean1/n of 0.827 (n=5) and recommended DT50 in soil is 150.9 days (geomean normalized field data for acidic soils (pH H2O <6.7), n=5)

CGA275535

Parameters used (step 1-2)	Molecular weight: 241.3 Soil or water metabolite: soil **Koc (mL/g):** 1810 (geometric mean) **DT_{50} soil (d):** *0.9 days max lab value, n=3)* **DT_{50} water/sediment system (d)**: 1000 *d (FOCUS default)* Maximum occurrence observed : <u>Total Water and Sediment</u>: Not observed; 1 x 10^{-15}% <u>Soil</u>: 10.4 %

CGA249287

Parameters used (step 1-2)	Molecular weight: 149.2 Soil or water metabolite: soil and water **Koc (mL/g):** 334.95 (geometric mean) **DT_{50} soil (d):** 34.6 (geomean, lab) **DT_{50} water/sediment system (d)**: 1000 *d (FOCUS default)* Maximum occurrence observed : <u>Total Water and Sediment</u>: 21.1 % <u>Soil</u>: 14.3 %

CGA321915

Parameters used (step 1-2)	Molecular weight: 150.2 Soil or water metabolite: soil and water **Koc (mL/g):** 133.4 (geomean) **DT_{50} soil (d):** 49.2 (geomean, lab) **DT_{50} water/sediment system (d)**: 1000 *d (FOCUS default)* Maximum occurrence observed : <u>Total Water and Sediment</u>: *Not observed; 1 x 10^{-15}%* <u>Soil</u>: 6.3 %

CGA048109

Parameters used (step 1-2)	Molecular weight: 59.5 Soil or water metabolite: aquatic photolysis **Koc (mL/g):** *1 (default)* **DT_{50} soil (d):** 1000 *d (default)* **DT_{50} water/sediment system (d)**: 1000 *d (FOCUS default)* Maximum occurrence observed : <u>Total Water and Sediment</u>: *26.0 %*

	Soil: 0 %

CGA263208 (CA1139A)

Parameters used (step 1-2)	Molecular weight: 135.2 Soil or water metabolite: aquatic photolysis **Koc (mL/g):** *1 (default)* **DT_{50} soil (d):** 1000 *d (default)* **DT_{50} water/sediment system (d)**: 1000 *d (FOCUS default)* Maximum occurrence observed : Total Water and Sediment: *10.2 %* Soil: 0 %

R008591 (succinic acid)

Parameters used (step 1-2)	Molecular weight: 118.09 Soil or water metabolite: aquatic photolysis **Koc (mL/g):** *1 (default)* **DT_{50} soil (d):** 1000 *d (default)* **DT_{50} water/sediment system (d)**: 1000 *d (FOCUS default)* Maximum occurrence observed : Total Water and Sediment: *13.7 %* Soil: 0 %

Active substance – STEP 1-2

Step	Region / Timing	Single application			Multiple application		
		Max PEC_{SW} (µg/L)	TWA 21d PEC_{SW} (µg/L)	Max PEC_{SED} (µg/kg)	Max PEC_{SW} (µg/L)	TWA 21d PEC_{SW} (µg/L)	Max PEC_{SED} (µg/kg)
Winter and spring barley (surrogate crop cereals) - 2 × 450 g a.s./ha - BBCH 30-61							
1	-	50.1	45.2	798	100	90.4	1600
2	North Europe Mar - May	8.80	8.06	142	16.6	15.2	269
	North Europe Jun - Sep	8.80	8.06	142	16.6	15.2	269
	South Europe Mar - May	16.0	14.9	264	30.3	28.4	502
	South Europe Jun - Sep	12.4	11.5	203	23.4	21.8	385
Apple - 3 × 375 g a.s./ha - BBCH 10-71							
1	-	74.8	47.9	836	224	144	2510
2	North Europe Mar - May	36.5	17.0	287	50.8	39.1	687
	North Europe Jun - Sep	36.5	17.0	287	50.8	39.1	687
	South Europe Mar - May	36.5	21.8	388	64.0	54.2	955
	South Europe Jun - Sep	36.5	19.4	337	56.1	46.6	821

Metabolites – STEP 1-2

Step	Region / Timing	A14325E - Cereals - 2 × 450 g a.s./ha		*A8637C* - Pome/stone, early - 3 × 375 g a.s./ha	
		Max PEC_{SW} (µg/L)	Max PEC_{SED} (µg/kg)	Max PEC_{SW} (µg/L)	Max PEC_{SED} (µg/kg)
CGA275535					
1	-	20.1	363	8.44	249.95
2	North EU - Mar – May / Jun - Sep	0.02 (0.02)	0.73 (0.74)	0.02 (0.02)	0.46 (0.46)
	South EU - Mar - May	0.05 (0.05)	1.47 (1.47)	0.03 (0.03)	0.92 (0.92)
	South EU - Jun - Sep	0.04 (0.04)	1.10 (1.10)	0.02 (0.02)	0.69 (0.69)
CGA249287					
1	-	46.58	157.08	72.17	228.96
2	North EU - Mar – May / Jun - Sep	7.33 (3.94)	24.62 (13.22)	15.01 (6.11)	47.65 (19.39)
	South EU - Mar - May	13.87 (7.43)	46.86 (25.08)	20.49 (8.29)	66.25 (26.80)
	South EU - Jun - Sep	10.60 (5.68)	35.74 (19.15)	17.75 (7.20)	56.95 (23.09)
CGA321915					
1	-	11.31	15.09	14.14	18.86
2	North EU - Mar – May / Jun - Sep	1.56 (0.86)	2.08 (1.14)	1.23 (0.53)	1.64 (0.71)
	South EU - Mar - May	3.11 (1.71)	4.15 (2.28)	2.46 (1.07)	3.28 (1.43)
	South EU - Jun - Sep	2.34 (1.28)	3.12 (1.71)	1.84 (0.80)	2.46 (1.07)

Numbers in brackets correspond to a single application

Aquatic Photolysis Metabolites

	Step	Region / Timing	CGA048109		CGA263208		R008591	
			PECsw (µg/L)	PECsed (µg/kg)	PECsw (µg/L)	PECsed (µg/kg)	PECsw (µg/L)	PECsed (µg/kg)
Cereals 2 × 450 g a.s./ha BBCH 30-61	1	-	21.14 (10.57)	0.21 (0.11)	18.85 (9.42)	0.19 (0.09)	22.11 (11.05)	0.22 (0.11)
	2	North, Mar - May	4.35 (2.29)	0.04 (0.02)	3.88 (2.04)	0.04 (0.02)	4.55 (2.40)	0.05 (0.02)
		North, Jun – Sep	4.35 (2.29)	0.04 (0.02)	3.88 (2.04)	0.04 (0.02)	4.55 (2.40)	0.05 (0.02)
		South, Mar - May	8.21 (4.30)	0.08 (0.04)	7.31 (3.83)	0.07 (0.04)	8.58 (4.50)	0.09 (0.04)
		South, Jun - Sep	6.28 (3.30)	0.06 (0.03)	5.60 (2.94)	0.06 (0.03)	6.57 (3.45)	0.07 (0.03)
Apple 3 × 375 g a.s./ha BBCH 10-71	1	-	33.23 (11.08)	0.33 (0.11)	29.63 (9.88)	0.30 (0.10)	34.76 (11.59)	0.35 (0.12)
	2	North, Mar - May	9.62 (3.84)	0.10 (0.04)	8.57 (3.42)	0.09 (0.03)	10.06 (4.01)	0.10 (0.04)
		North, Jun – Sep	9.62 (3.84)	0.10 (0.04)	8.57 (3.42)	0.09 (0.03)	10.06 (4.01)	0.10 (0.04)
		South, Mar - May	13.17 (5.17)	0.13 (0.05)	11.74 (4.61)	0.12 (0.05)	13.78 (5.41)	0.14 (0.05)
		South, Jun - Sep	11.39 (4.51)	0.11 (0.05)	10.16 (4.02)	0.10 (0.04)	11.92 (4.71)	0.12 (0.05)

Numbers in brackets refer to respective single application

STEP 3-4 – Active substance

Parameters used in FOCUSsw step 3	Version control no.'s of FOCUS software: FOCUS SWASH (v 5.3), including FOCUS-MACRO (v 5.5.4), FOCUS-PRZM (v 4.3.1) and FOCUS-TOXSWA (v 4.4.3), Water solubility (mg/L): 20 Vapour pressure: 5.1 x 10-4 Pa at 20°C

	Kf_{OC} (mL/g): 1698* (geometric mean, n=5) 1/n : 0.84* (arithmetic mean, n=5) DT50 water/sediment (d): 1000 d (FOCUS default) / 158.8 d (DT50 whole system) Crop uptake factor: 0
Application rate	Crop and growth stage: cereals BBCH 30-61 Number of applications: 2 Interval (d): 14 Application rate(s): 450 g a.s./ha

* For future calculations recommended geomean Kfoc is 1781.0 (n=5) with mean1/n of 0.827 (n=5) and recommended DT_{50} in soil is 150.9 days (geomean normalized field data for acidic soils (pH H_2O <6.7), n=5)

Application window:

Scenario	Winter barley		Spring barley	
	First date of application window	Last date of application window	First date of application window	Last date of application window
D1	29-May (149)	12-Jul (193)	23-May (143)	06-Jul (187)
D2	21-Apr (111)	4-Jun (155)	-	-
D3	24-Apr (114)	7-Jun (158)	28-Apr (118)	11-Jun (162)
D4	30-Apr (120)	13-Jun (164)	23-May (143)	06-Jul (187)
D5	17-Apr (120)	31-May (151)	15-Apr (105)	29-May (149)
D6	2-Mar (61)	15-Apr (105)	-	-
R1	9-Apr (99)	23-May (143)	-	-
R3	3-Apr (93)	17-May (137)	-	-
R4	14-Apr (104)	28-May (148)	21-Apr (111)	04-Jun (155)

Numbers in brackets are the corresponding ‘Julian Day’ numbers

Global maximum Predicted Environmental Concentrations of cyprodinil following applications to cereals
Step 3 PECsw, PECsed and TWA PECsw for cyprodinil following single and multiple applications to spring barley

Application scenario	Scenario	Waterbody	Option 1 : Water DT_{50} = 158.8 d // Sediment DT_{50} = 1000 d			Option 2 : Water DT_{50} = 1000 d // Sediment DT_{50} = 158.8 d			TWA PECsw (max of the 2 options)		
			Dominant Route	PECSW (µg/L)	PECSED (µg/kg)	Dominant Route	PECSW (µg/L)	PECSED (µg/kg)	7 d	21 d	28 d
Spring cereals, 1 x 450 g/ha BBCH 30	D1	ditch	Drift	3.46	30.5	Drift	3.45	25.7	2.77	2.2	2.01
	D1	stream	Drift	2.53	15.7	Drift	2.53	13.6	0.665	0.642	0.64
	D3	ditch	Drift	2.85	2.03	Drift	2.85	2.03	0.457	0.155	0.117
	D4	pond	Drift	0.098	1.23	Drift	0.098	1.18	0.088	0.076	0.073
	D4	stream	Drift	2.33	0.296	Drift	2.33	0.289	0.063	0.022	0.017
	D5	pond	Drift	0.100	0.965	Drift	0.100	0.928	0.09	0.079	0.075
	D5	stream	Drift	2.47	0.156	Drift	2.47	0.156	0.028	0.009	0.007
	R4	stream	Runoff	1.94	6.43	Runoff	1.94	6.41	0.615	0.288	0.225
Spring cereals, 2 x 450 g/ha BBCH 30	D1	ditch	Drift	4.78	62.3	Drift	4.79	52.6	4.05	3.32	3.24
	D1	stream	Drift	2.21	32.8	Drift	2.20	28.3	1.58	1.54	1.52
	D3	ditch	Drift	2.49	2.62	Drift	2.49	2.60	0.415	0.273	0.207
	D4	pond	Drainage	0.175	2.33	Drainage	0.179	2.26	0.165	0.144	0.135
	D4	stream	Drift	2.12	0.722	Drift	2.12	0.702	0.155	0.055	0.041
	D5	pond	Drift	0.137	1.57	Drift	0.138	1.51	0.128	0.116	0.112
	D5	stream	Drift	2.15	0.202	Drift	2.15	0.200	0.026	0.017	0.013
	R4	stream	Runoff	2.01	9.57	Runoff	2.01	8.12	0.636	0.306	0.242

Step 3 PECsw, PECsed and TWA PECsw for cyprodinil following single and multiple applications to winter barley

Application scenario	Scenario	Waterbody	Option 1 : Water DT_{50} = 158.8 d // Sediment DT_{50} = 1000 d			Option 2 : Water DT_{50} = 1000 d // Sediment DT_{50} = 158.8 d			TWA PECsw (max of the 2 options)		
			Dominant Route	PECSW (µg/L)	PECSED (µg/kg)	Dominant Route	PECSW (µg/L)	PECSED (µg/kg)	7 d	21 d	28 d
Winter cereals, 1 x 450 g/ha BBCH 30	D1	ditch	Drift	3.25	26.8	Drift	3.25	23.2	2.57	2.04	1.86
	D1	stream	Drift	2.52	13.1	Drift	2.52	11.3	0.69	0.665	0.66
	D2	ditch	Drift	3.28	21.9	Drift	3.28	18.6	2.6	1.34	1.14
	D2	stream	Drift	2.77	12.7	Drift	2.77	12.3	2.13	0.939	0.776
	D3	ditch	Drift	2.84	1.88	Drift	2.84	1.88	0.417	0.142	0.107
	D4	pond	Drift	0.098	1.19	Drift	0.098	1.14	0.088	0.077	0.073
	D4	stream	Drift	2.37	0.264	Drift	2.37	0.255	0.054	0.019	0.014
	D5	pond	Drift	0.100	0.985	Drift	0.100	0.947	0.09	0.079	0.076
	D5	stream	Drift	2.51	0.191	Drift	2.51	0.190	0.035	0.012	0.009
	D6	ditch	Drift	2.84	1.98	Drift	2.84	1.98	0.432	0.15	0.115
	R1	pond	Runoff	0.180	2.96	Runoff	0.186	2.77	0.175	0.159	0.154
	R1	stream	Drift	1.87	3.25	Drift	1.87	3.12	0.14	0.084	0.067
	R3	stream	Drift	2.65	4.36	Drift	2.65	4.35	0.19	0.107	0.085
	R4	stream	Drift	1.88	6.16	Drift	1.88	6.14	0.563	0.266	0.208
Winter cereals, 2 x 450 g/ha BBCH 30	D1	ditch	Drift	4.29	47.1	Drift	4.29	39.4	3.59	2.92	2.72
	D1	stream	Drift	2.19	23.1	Drift	2.18	20.0	1.3	1.22	1.21
	D2	ditch	Drainage	6.43	53.2	Drainage	6.43	45.4	3.13	2.59	2.35
	D2	stream	Drainage	4.02	30.5	Drainage	4.02	26.0	2.36	1.37	1.2
	D3	ditch	Drift	2.49	2.39	Drift	2.49	2.36	0.403	0.138	0.193
	D4	pond	Drainage	0.145	2.16	Drainage	0.149	2.09	0.137	0.12	0.114
	D4	stream	Drift	2.10	0.587	Drift	2.10	0.567	0.123	0.044	0.033
	D5	pond	Drift	0.137	1.59	Drift	0.139	1.53	0.13	0.118	0.114
	D5	stream	Drift	2.29	0.711	Drift	2.29	0.708	0.125	0.051	0.039
	D6	ditch	Drift	2.50	4.07	Drift	2.50	4.03	1.01	0.408	0.315
	R1	pond	Runoff	0.466	6.94	Runoff	0.481	6.58	0.452	0.411	0.396
	R1	stream	Runoff	2.99	8.34	Runoff	2.99	8.01	0.39	0.232	0.188
	R3	stream	Runoff	2.33	5.51	Runoff	2.33	5.24	0.332	0.201	0.16
	R4	stream	Runoff	1.85	9.13	Runoff	1.85	7.91	0.578	0.282	0.223

STEP 4 PECsw for cyprodinil following single and multiple applications to spring barley

		Option 1, DT_{50},water = 158.8 days								Option 2, DT_{50},sed = 158.8 days							
Vegetative strip (m)		-		-		10		20		-		-		10		20	
No spray buffer (m)		5		10		10		20		5		10		10		20	
Nozzle reduction (%)		-															
Scenario	Water body	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route
Spring barley - 1 x 450 g a.s/ha - BBCH 30																	
D1	ditch	1.48	Drainage	1.24	Drainage					1.48	Drainage	1.24	Drainage				
D1	stream	0.935	Drift	0.774	Drainage					0.934	Drift	0.774	Drainage				
D3	ditch	0.792	Drift	0.441	Drift					0.793	Drift	0.441	Drift				
D4	pond	0.115	Drainage	0.084	Drainage	-				0.115	Drainage	0.084	Drainage	-			
D4	stream	0.883	Drift	0.476	Drift					0.883	Drift	0.476	Drift				
D5	pond	0.116	Drainage	0.086	Drainage					0.117	Drainage	0.086	Drainage				
D5	stream	0.939	Drift	0.506	Drift					0.939	Drift	0.506	Drift				
R4	stream	1.94	Runoff	1.94	Runoff	0.884	Runoff	0.463	Runoff	1.94	Runoff	1.94	Runoff	0.884	Runoff	0.463	Runoff
Spring barley – 2 x 450 g a.s/ha - BBCH 30																	
D1	ditch	2.77	Drainage	2.77	Drainage					2.77	Drainage	2.77	Drainage				
D1	stream	1.74	Drainage	1.74	Drainage					1.74	Drainage	1.74	Drainage				
D3	ditch	0.679	Drift	0.383	Drift					0.679	Drift	0.383	Drift				
D4	pond	0.183	Drainage	0.174	Drainage	-				0.187	Drainage	0.177	Drainage	-			
D4	stream	0.779	Drift	0.616	Drainage					0.779	Drift	0.616	Drainage				
D5	pond	0.170	Drainage	0.125	Drainage					0.173	Drainage	0.126	Drainage				

Option 1, DT_{50},water = 158.8 days										Option 2, DT_{50},sed = 158.8 days							
Vegetative strip (m)		-		-		10		20		-		-		10		20	
No spray buffer (m)		5		10		10		20		5		10		10		20	
Nozzle reduction (%)		-															
Scenario	Water body	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route
D5	stream	0.793	Drift	0.421	Drift					0.793	Drift	0.421	Drift				
R4	stream	2.01	Runoff	2.01	Runoff	0.913	Runoff	0.478	Runoff	2.01	Runoff	2.01	Runoff	0.913	Runoff	0.478	Runoff

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.

STEP 4 PECsw for cyprodinil following single and multiple applications to winter barley

Option DT50,WATER = 158.8 days										Option DT50,SEDIMENT = 158.8 days							
Vegetative strip (m)		-		-		10		20		-		-		10		20	
No spray buffer (m)		5		10		10		20		5		10		10		20	
Scenario	Water body	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route	PECSW (µg/L)	Dominant entry route
Winter barley - 1 x 450 g a.s/ha - BBCH 30																	
D1	ditch	1.28	Drainage	1.10	Drainage	-				1.28	Drainage	1.10	Drainage	-			
D1	stream	0.927	Drift	0.722	Drainage					0.926	Drift	0.722	Drainage				
D2	ditch	2.13	Drainage	2.13	Drainage					2.13	Drainage	2.13	Drainage				
D2	stream	1.34	Drainage	1.34	Drainage					1.34	Drainage	1.34	Drainage				
D3	ditch	0.788	Drift	0.437	Drift					0.788	Drift	0.437	Drift				
D4	pond	0.115	Drainage	0.084	Drainage					0.115	Drainage	0.084	Drainage				
D4	stream	0.907	Drift	0.492	Drift					0.907	Drift	0.492	Drift				
D5	pond	0.117	Drainage	0.086	Drainage					0.117	Drainage	0.086	Drainage				
D5	stream	0.950	Drift	0.512	Drift					0.950	Drift	0.512	Drift				
D6	ditch	0.792	Drift	0.602	Drainage					0.792	Drift	0.602	Drainage				
R1	pond	0.188	Runoff	0.176	Runoff	0.091	Runoff	0.054	Runoff	0.195	Runoff	0.182	Runoff	0.095	Runoff	0.054	Runoff
R1	stream	1.08	Runoff	1.08	Runoff	0.490	Runoff	0.257	Runoff	1.08	Runoff	1.08	Runoff	0.490	Runoff	0.257	Runoff
R3	stream	1.37	Runoff	1.37	Runoff	0.625	Runoff	0.328	Runoff	1.37	Runoff	1.37	Runoff	0.625	Runoff	0.328	Runoff
R4	stream	1.80	Runoff	1.80	Runoff	0.821	Runoff	0.430	Runoff	1.81	Runoff	1.81	Runoff	0.821	Runoff	0.430	Runoff
Winter barley - 2 x 450 g a.s/ha - BBCH 30																	
D1	ditch	2.04	Drainage	2.04	Drainage	-				2.04	Drainage	2.04	Drainage	-			
D1	stream	1.36	Drainage	1.36	Drainage					1.36	Drainage	1.36	Drainage				

D2	ditch	6.42	Drainage	6.42	Drainage					6.42	Drainage	6.42	Drainage				
D2	stream	4.02	Drainage	4.02	Drainage					4.02	Drainage	4.02	Drainage				
D3	ditch	0.677	Drift	0.381	Drift					0.677	Drift	0.381	Drift				
D4	pond	0.171	Drainage	0.144	Drainage					0.173	Drainage	0.147	Drainage				
D4	stream	0.782	Drift	0.491	Drainage					0.782	Drift	0.491	Drainage				
D5	pond	0.171	Drainage	0.125	Drainage					0.174	Drainage	0.127	Drainage				
D5	stream	0.834	Drift	0.447	Drift					0.834	Drift	0.447	Drift				
D6	ditch	1.11	Drainage	1.11	Drainage					1.11	Drainage	1.11	Drainage				
R1	pond	0.486	Runoff	0.462	Runoff	0.224	Runoff	0.120	Runoff	0.502	Runoff	0.476	Runoff	0.232	Runoff	0.124	Runoff
R1	stream	2.99	Runoff	2.99	Runoff	1.36	Runoff	0.710	Runoff	2.99	Runoff	2.99	Runoff	1.36	Runoff	0.710	Runoff
R3	stream	2.33	Runoff	2.33	Runoff	1.05	Runoff	0.546	Runoff	2.33	Runoff	2.33	Runoff	1.05	Runoff	0.546	Runoff
R4	stream	1.85	Runoff	1.85	Runoff	0.841	Runoff	0.440	Runoff	1.85	Runoff	1.85	Runoff	0.841	Runoff	0.440	Runoff

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.

Parent - Parameters used in FOCUSsw step 3	FOCUS software: FOCUS SWASH (v 5.3), including FOCUS-MACRO (v 5.5.4), FOCUS-PRZM (v 4.3.1) and FOCUS-TOXSWA (v 4.4.3) Water solubility (mg/L): 20 Vapour pressure: 5.1 x 10-4 Pa at 20°C KfOC (mL/g): 1698 *(geometric mean, n=5) 1/n : 0.84* (arithmetic mean, n=5) DT50 water/sediment (d): 1000 d (FOCUS default) / 158.8 d (DT50 whole system) Crop uptake factor: 0

* Recommended geomean Kfoc is 1781.0 (n=5) with mean1/n of 0.827 (n=5) and recommended DT50 in soil is 150.9 days (geomean normalized field data for acidic soils (pH H2O <6.7), n=5)

Due to the rather long possible application period (BBCH 10-71), two application windows (early and late) are simulated. The FOCUS standard crops 'pome/stone fruit (early application)' and 'pome/stone fruit (late application)' were use as surrogate crops in the early (starting at BBCH10) and late simulation window (Ending at BBCH71), respectively.

Crop	Scenario	Application window used in modelling			
		Start of Window		End of Window	
Apple Early application Use No.1	D3	16-Apr	(106)	27-Jun	(178)
	D4	21-Apr	(111)	2-Jul	(183)
	D5	2-Apr	(92)	13-Jun	(164)
	R1	16-Apr	(106)	27-Jun	(178)
	R2	16-Mar	(75)	27-May	(147)
	R3	2-Apr	(92)	13-Jun	(164)
	R4	16-Mar	(75)	27-May	(147)
Apple Late application Use No.2	D3	24-Jun	(175)	4-Sep	(247)
	D4	24-Jun	(175)	4-Sep	(247)
	D5	4-Jun	(155)	15-Aug	(227)
	R1	24-Jun	(175)	4-Sep	(247)
	R2	25-May	(145)	5-Aug	(217)
	R3	9-Jun	(160)	20-Aug	(232)
	R4	9-Jun	(160)	20-Aug	(232)

Numbers in brackets are the corresponding Julian day numbers.

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Global maximum Predicted Environmental Concentrations of cyprodinil following applications to apple

Step 3 PECsw, PECsed and TWA PECsw for cyprodinil following single and multiple applications to apple, early applications

Application scenario	Scenario	Waterbody	Option 1 : Water DT50 = 158.8 d // Sediment DT50 = 1000 d						Option 2 : Water DT50 = 1000 d // Sediment DT50 = 158.8 d					
			Dominant Route	PECSW (µg/L)	TWA PECsw			PECSED (µg/kg)	Dominant Route	PECSW (µg/L)	TWA PECsw			PECSED (µg/kg)
					7 d	21 d	28 d				7 d	21 d	28 d	
Pome/stone, Early appl. 1 x 375 g/ha BBCH 10	D3	Ditch	Drift	29.1	4.63	1.57	1.18	19.3	Drift	29.1	4.63	1.57	1.18	19.3
	D4	Pond	Drift	1.77	1.59	1.40	1.33	13.5	Drift	1.77	1.60	1.42	1.36	13.3
	D4	Stream	Drift	29.6	0.454	0.152	0.114	2.42	Drift	29.6	0.454	0.152	0.114	2.42
	D5	Pond	Drift	1.77	1.59	1.40	1.34	14.1	Drift	1.77	1.59	1.42	1.36	13.7
	D5	Stream	Drift	28.8	0.163	0.054	0.041	0.886	Drift	28.8	0.163	0.054	0.041	0.886
	R1	Pond	Drift	1.76	1.58	1.37	1.30	12.3	Drift	1.76	1.59	1.39	1.32	12.0
	R1	Stream	Drift	23.5	0.565	0.189	0.148	2.99	Drift	23.5	0.565	0.189	0.148	2.99
	R2	Stream	Drift	31.1	0.360	0.136	0.102	1.93	Drift	31.1	0.360	0.136	0.102	1.93
	R3	Stream	Drift	33.2	1.52	0.579	0.435	7.62	Drift	33.2	1.52	0.579	0.435	7.62
	R4	Stream	Drift	23.6	0.670	0.244	0.203	3.51	Drift	23.6	0.670	0.244	0.203	3.51
Pome/stone, Early appl. 3 x 375 g/ha BBCH 10	D3	Ditch	Drift	23.5	5.68	1.96	1.65	29.0	Drift	23.5	5.70	1.96	1.65	28.2
	D4	Pond	Drift	3.06	2.87	2.63	2.53	31.1	Drift	3.14	2.97	2.75	2.66	30.5
	D4	Stream	Drift	24.4	0.685	0.229	0.262	4.34	Drift	24.4	0.685	0.229	0.262	4.30
	D5	Pond	Drift	3.04	2.86	2.64	2.55	32.8	Drift	3.15	2.98	2.79	2.71	32.0
	D5	Stream	Drift	26.7	1.46	0.489	0.367	7.88	Drift	26.7	1.46	0.489	0.367	7.83
	R1	Pond	Drift	2.92	2.71	2.43	2.32	27.5	Drift	3.02	2.82	2.57	2.46	26.9
	R1	Stream	Drift	18.9	0.711	0.238	0.281	4.76	Drift	18.9	0.711	0.238	0.281	4.67
	R2	Stream	Drift	25.3	0.375	0.178	0.134	4.16	Drift	25.3	0.375	0.178	0.134	3.98
	R3	Stream	Drift	26.6	1.43	0.483	0.665	8.92	Drift	26.6	1.43	0.483	0.665	8.80
	R4	Stream	Drift	18.9	0.993	0.494	0.404	7.95	Drift	18.9	0.993	0.494	0.404	7.83

Step 3 PECsw, PECsed and TWA PECsw for cyprodinil following single and multiple applications to apple, late applications

Application scenario	Scenario	Waterbody	Option 1 : Water DT50 = 158.8 d // Sediment DT50 = 1000 d						Option 2 : Water DT50 = 1000 d // Sediment DT50 = 158.8 d					
			Dominant Route	PECSW (µg/L)	TWA PECsw			PECSED (µg/kg)	Dominant Route	PECSW (µg/L)	TWA PECsw			PECSED (µg/kg)
					7 d	21 d	28 d				7 d	21 d	28 d	
Pome/stone, Late appl. 1 x 375 g/ha BBCH 71	D3	Ditch	Drift	13.8	3.32	1.14	0.863	12.8	Drift	13.8	3.33	1.15	0.864	12.8
	D4	Pond	Drift	0.615	0.551	0.481	0.456	5.03	Drift	0.615	0.556	0.493	0.471	5.03
	D4	Stream	Drift	13.8	0.535	0.179	0.134	2.75	Drift	13.8	0.535	0.179	0.134	2.75
	D5	Pond	Drift	0.617	0.556	0.489	0.466	5.27	Drift	0.617	0.560	0.500	0.479	5.16
	D5	Stream	Drift	14.9	0.812	0.272	0.204	4.07	Drift	14.9	0.813	0.272	0.205	4.06
	R1	Pond	Drift	0.616	0.546	0.500	0.477	4.94	Drift	0.616	0.551	0.512	0.492	4.91
	R1	Stream	Drift	10.6	0.316	0.157	0.118	3.19	Drift	10.6	0.316	0.157	0.118	3.16
	R2	Stream	Drift	14.1	0.209	0.087	0.065	1.57	Drift	14.1	0.209	0.087	0.065	1.55

Application scenario	Scenario	Waterbody	Option 1 : Water DT50 = 158.8 d // Sediment DT50 = 1000 d						Option 2 : Water DT50 = 1000 d // Sediment DT50 = 158.8 d					
			Dominant Route	PECSW (µg/L)	TWA PECsw			PECSED (µg/kg)	Dominant Route	PECSW (µg/L)	TWA PECsw			PECSED (µg/kg)
					7 d	21 d	28 d				7 d	21 d	28 d	
	R3	Stream	Drift	14.9	0.791	0.265	0.199	3.96	Drift	14.9	0.791	0.265	0.199	3.96
	R4	Stream	Drift	10.6	0.315	0.210	0.188	2.12	Drift	10.6	0.315	0.210	0.188	2.04
Pome/stone, Late appl. 3 x 375 g/ha BBCH 71	D3	Ditch	Drift	9.84	5.35	2.20	1.67	22.4	Drift	9.83	5.38	2.21	1.68	21.7
	D4	Pond	Drift	0.908	0.847	0.771	0.742	11.1	Drift	0.948	0.892	0.820	0.792	11.1
	D4	Stream	Drift	9.85	0.405	0.136	0.197	2.73	Drift	9.85	0.406	0.136	0.197	2.69
	D5	Pond	Drift	0.946	0.887	0.811	0.782	11.3	Drift	0.988	0.934	0.867	0.840	11.3
	D5	Stream	Drift	10.6	0.580	0.195	0.291	4.35	Drift	10.6	0.581	0.195	0.291	4.21
	R1	Pond	Drift	0.940	0.871	0.780	0.746	9.95	Drift	0.977	0.913	0.828	0.795	9.97
	R1	Stream	Drift	7.53	0.226	0.134	0.100	3.34	Drift	7.53	0.226	0.134	0.101	3.12
	R2	Stream	Drift	10.1	0.155	0.069	0.052	1.96	Drift	10.1	0.155	0.069	0.052	1.91
	R3	Stream	Drift	10.6	0.565	0.204	0.237	4.63	Drift	10.6	0.565	0.204	0.237	4.29
	R4	Stream	Drift	7.53	0.703	0.339	0.341	5.44	Drift	7.53	0.703	0.339	0.341	5.05

Step 4 PECSW for cyprodinil following single application to apple, early applications (Option 1: DT50,WATER = 158.8 days)

PECsw (µg/L)		Vegetative strip (m)	-								10			20				
Scenario	Water body	No spray buffer (m)	-	5	10	15	20	25	30	40	5	10	15	20	25	30	40	45
Pome/stone crop, early applications - 1 x 375 g a.s./ha																		
D3	ditch			22.8	14.0	6.30	3.20	1.89			-							
D4	pond			1.99	1.10	0.582	0.359	0.247	0.182	0.114								
D4	stream			25.5	15.7	7.06	3.60	2.13	1.39									
D5	pond			1.99	1.09	0.582	0.359	0.247	0.182	0.114								
D5	stream			24.8	15.2	6.85	3.49	2.06	1.34									
R1	pond	0% Nozzle reduction		1.99	1.10	0.582	0.359	0.247	0.182	0.114	1.99	1.10	0.582	0.359	0.247	0.182	0.114	0.094
R1	stream			20.2	12.4	5.61	2.86	1.70	1.11		20.2	12.4	5.61	2.86	1.70	1.11		
R2	stream			26.8	16.5	7.42	3.78	2.24	1.46		26.8	16.5	7.42	3.78	2.24	1.46		
R3	stream			28.6	17.6	7.90	4.02	2.38	1.56		28.6	17.6	7.90	4.02	2.38	1.56		
R4	stream			20.4	12.5	5.63	2.87	1.71	1.16	1.16	20.4	12.5	5.63	2.87	1.71	1.12	0.581	0.448
D3	ditch		14.5	11.4	7.01	3.15	1.60				-							
D4	pond		0.904	1.01	0.558	0.301	0.188	0.133	0.100									
D4	stream		14.9	12.8	7.86	3.55	1.81											
D5	pond		0.904	1.01	0.557	0.300	0.188	0.133	0.100									
D5	stream		14.4	12.4	7.62	3.43	1.75											
R1	pond	50% Nozzle reduction	0.904	1.01	0.558	0.300	0.188	0.132	0.100		1.01	0.558	0.300	0.188	0.132	0.100	0.066	
R1	stream		11.8	10.2	6.24	2.82	1.45				10.2	6.24	2.82	1.45				
R2	stream		15.6	13.4	8.25	3.73	1.90				13.4	8.25	3.73	1.90				
R3	stream		16.6	14.3	8.78	3.95	2.02				14.3	8.78	3.95	2.02				
R4	stream		11.9	10.2	6.27	2.84	1.45	1.16	1.16		10.2	6.27	2.84	1.45	0.869	0.577	0.310	
D3	ditch		7.26	5.70	3.50	1.58					-							
D4	pond		0.476	0.520	0.293	0.162	0.103											
D4	stream		7.48	6.42	3.95	1.79												
D5	pond		0.475	0.519	0.293	0.162	0.103											
D5	stream		7.24	6.21	3.82	1.72												
R1	pond	75% Nozzle reduction	0.475	0.519	0.293	0.162	0.103				0.519	0.293	0.162	0.103				
R1	stream		5.95	5.10	3.14	1.43					5.10	3.14	1.43					
R2	stream		7.85	6.74	4.15	1.88					6.74	4.15	1.88					
R3	stream		8.34	7.16	4.41	2.00					7.16	4.41	2.00					
R4	stream		5.98	5.13	3.16	1.44	1.16	1.16			5.13	3.16	1.44	0.742	0.454	0.308		
D3	ditch		2.90	2.28	1.40						-							
D4	pond		0.221	0.232	0.136													
D4	stream	90% Nozzle reduction	3.04	2.61	1.61													
D5	pond		0.221	0.232	0.136													
D5	stream		2.91	2.50	1.54													
R1	pond		0.221	0.232	0.136						0.232	0.136						

R1	stream		2.44	2.09	1.29						2.09	1.29						
R2	stream		3.18	2.73	1.69						2.73	1.69						
R3	stream		3.40	2.91	1.80						2.91	1.80						
R4	stream		2.44	2.10	1.30	1.16	1.16				2.10	1.30	0.605	0.320				

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.
All PECsw results for which the drift mitigation was > 95% or runoff mitigation was >90% were deleted from the PECsw results tables, as these PECsw are not considered as acceptable according to the Landscape and Mitigation guidance document.

Step 4 PECsw for cyprodinil following single multiple application to apple, early application period (Option 1: $DT_{50,SED\ WATER}$ = 158.8 days)

PECsw (µg/L)		Vegetative strip (m)	-								10			20				
Scenario	Water body	No spray buffer (m)	-	5	10	15	20	25	30	40	5	10	15	20	25	30	40	45
Pome/stone crop, early applications - 3 x 375 g a.s./ha																		
D3	ditch	0% Nozzle reduction		18.1	10.6	5.98	2.75	1.50			-							
D4	pond			3.49	1.98	1.04	0.587	0.382	0.270	0.161								
D4	stream			20.7	12.2	6.86	3.16	1.74										
D5	pond			3.47	1.97	1.03	0.585	0.382	0.272	0.163								
D5	stream			22.6	13.3	7.49	3.45	1.88										
R1	pond			3.33	1.90	1.000	0.574	0.378	0.273	0.169	3.32	1.89	0.990	0.561	0.366	0.260	0.156	
R1	stream			16.1	9.46	5.33	2.47	1.55	1.55	1.55	16.1	9.46	5.33	2.46	1.36	0.840	0.404	
R2	stream			21.6	12.7	7.15	3.30	1.82			21.6	12.7	7.15	3.30	1.82			
R3	stream			22.6	13.3	7.47	3.44	1.90	1.58	1.58	22.6	13.3	7.47	3.44	1.89	1.17	0.560	
R4	stream			16.1	9.46	5.32	4.47	4.47	4.47	4.47	16.1	9.46	5.32	2.46	1.36	1.06	1.06	
D3	ditch	50% Nozzle reduction	11.8	9.04	5.32	2.99	1.38											
D4	pond		1.60	1.76	1.01	0.535	0.309	0.208	0.153									
D4	stream		12.2	10.4	6.11	3.44	1.60											
D5	pond		1.59	1.75	1.00	0.534	0.310	0.210	0.155									
D5	stream		13.4	11.3	6.66	3.75	1.73											
R1	pond		1.53	1.69	0.974	0.525	0.310	0.214	0.161		1.68	0.965	0.515	0.297	0.201	0.149		
R1	stream		9.51	8.06	4.75	2.68	1.55	1.55	1.55		8.06	4.75	2.68	1.25	0.697	0.440		
R2	stream		12.8	10.8	6.37	3.59	1.67				10.8	6.37	3.59	1.67				
R3	stream		13.3	11.3	6.65	3.74	1.74	1.58	1.58		11.3	6.65	3.74	1.74	0.969	0.610		
R4	stream		9.51	8.05	4.75	4.47	4.47	4.47	4.47		8.05	4.75	2.68	1.25	1.06	1.06		
D3	ditch	75% Nozzle reduction	5.87	4.52	2.66	1.50												
D4	pond		0.844	0.914	0.532	0.290	0.172											
D4	stream		6.15	5.21	3.08	1.74												
D5	pond		0.841	0.910	0.531	0.291	0.174											
D5	stream		6.68	5.66	3.33	1.88												
R1	pond		0.817	0.884	0.521	0.291	0.180	0.132			0.874	0.511	0.282	0.167	0.119			
R1	stream		4.80	4.06	2.41	1.55	1.55	1.55			4.06	2.40	1.36	0.642	0.368			
R2	stream		6.42	5.44	3.22	1.82					5.44	3.22	1.82					
R3	stream		6.69	5.67	3.35	1.90	1.58	1.58			5.66	3.35	1.90	0.891	0.510			
R4	stream		4.80	4.47	4.47	4.47	4.47	4.47			4.06	2.40	2.03	1.06	1.06			
D3	ditch	90% Nozzle reduction	2.36	1.82	1.09													
D4	pond		0.398	0.413	0.250	0.144												
D4	stream		2.50	2.12	1.26													
D5	pond		0.398	0.414	0.251	0.146												
D5	stream		2.70	2.29	1.36													
R1	pond		0.394	0.409	0.253	0.153					0.399	0.243	0.143					

R1	stream		1.98	1.67	1.55	1.55	1.55				1.67	0.999	0.667	0.345				
R2	stream		2.63	2.22	1.32						2.22							
R3	stream		2.75	2.32	1.58	1.58	1.58				2.32	1.39	0.798	0.388				
R4	stream		4.47	4.47	4.47	4.47	4.47				2.03	2.03	2.03	1.06				

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.
All PECsw results for which the drift mitigation was > 95% or runoff mitigation was >90% were deleted from the PECsw results tables, as these PECsw are not considered as acceptable according to the Landscape and Mitigation guidance document.

Step 4 PECsw for cyprodinil following multiple single applications to apple, early application period (Option 2: $DT_{50,WATER\ SED}$= 158.8 days)

PECsw (µg/L)		Vegetative strip (m)	-								10			20				
Scenario	Water body	No spray buffer (m)	-	5	10	15	20	25	30	40	5	10	15	20	25	30	40	45
Pome/stone crop, early applications - 1 x 375 g a.s./ha																		
D3	ditch	0% Nozzle reduction		22.8	14.0	6.30	3.20	1.89										
D4	pond			1.99	1.10	0.582	0.359	0.247	0.183	0.114								
D4	stream			25.5	15.7	7.06	3.60	2.13	1.39									
D5	pond			1.99	1.10	0.582	0.359	0.247	0.183	0.114								
D5	stream			24.8	15.2	6.85	3.49	2.06	1.34									
R1	pond			1.99	1.10	0.582	0.359	0.247	0.182	0.114	1.99	1.10	0.582	0.359	0.247	0.182	0.114	0.094
R1	stream			20.2	12.4	5.61	2.86	1.70	1.11		20.2	12.4	5.61	2.86	1.70	1.11		
R2	stream			26.8	16.5	7.42	3.78	2.24	1.46		26.8	16.5	7.42	3.78	2.24	1.46		
R3	stream			28.6	17.6	7.90	4.02	2.38	1.56		28.6	17.6	7.90	4.02	2.38	1.56		
R4	stream			20.4	12.5	5.63	2.87	1.71	1.16	1.16	20.4	12.5	5.63	2.87	1.71	1.12	0.581	0.448
D3	ditch	50% Nozzle reduction	14.5	11.4	7.01	3.15	1.60											
D4	pond		0.905	1.01	0.558	0.301	0.188	0.133	0.100									
D4	stream		14.9	12.8	7.86	3.55	1.81											
D5	pond		0.904	1.01	0.558	0.301	0.188	0.133	0.101									
D5	stream		14.4	12.4	7.62	3.43	1.75											
R1	pond		0.905	1.01	0.558	0.301	0.188	0.133	0.100		1.01	0.558	0.301	0.188	0.133	0.100	0.066	
R1	stream		11.8	10.2	6.24	2.82	1.45				10.2	6.24	2.82	1.45				
R2	stream		15.6	13.4	8.25	3.73	1.90				13.4	8.25	3.73	1.90				
R3	stream		16.6	14.3	8.78	3.96	2.02				14.3	8.78	3.96	2.02				
R4	stream		11.9	10.2	6.27	2.84	1.45	1.16	1.16		10.2	6.27	2.84	1.45	0.869	0.577	0.310	
D3	ditch	75% Nozzle reduction	7.26	5.70	3.50	1.58												
D4	pond		0.477	0.520	0.294	0.162	0.103											
D4	stream		7.48	6.42	3.95	1.79												
D5	pond		0.476	0.520	0.294	0.162	0.103											
D5	stream		7.24	6.21	3.82	1.72												
R1	pond		0.476	0.520	0.294	0.162	0.103				0.520	0.294	0.162	0.103				
R1	stream		5.95	5.10	3.14	1.43					5.10	3.14	1.43					
R2	stream		7.85	6.74	4.15	1.88					6.74	4.15	1.88					
R3	stream		8.34	7.16	4.41	2.00					7.16	4.41	2.00					
R4	stream		5.98	5.13	3.16	1.44	1.16	1.16			5.13	3.16	1.44	0.742	0.454	0.308		
D3	ditch	90% Nozzle reduction	2.90	2.28	1.40													
D4	pond		0.221	0.233	0.136													
D4	stream		3.04	2.61	1.61													
D5	pond		0.221	0.233	0.137													
D5	stream		2.91	2.50	1.54													
R1	pond		0.221	0.232	0.136						0.232	0.136						

R1	stream		2.44	2.09	1.29						2.09	1.29						
R2	stream		3.18	2.73	1.69						2.73	1.69						
R3	stream		3.40	2.91	1.80						2.91	1.80						
R4	stream		2.44	2.10	1.30	1.16	1.16				2.10	1.30	0.605	0.320				

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.
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Step 4 PECsw for cyprodinil following multiple applications to apple, early application period (Option 2: DT_{50},sed = 158.8 days)

PECsw (µg/L)		Vegetative strip (m)	-								10			20				
Scenario	Water body	No spray buffer (m)	-	5	10	15	20	25	30	40	5	10	15	20	25	30	40	45
Pome/stone crop, early applications - 3 x 375 g a.s./ha																		
D3	ditch	0% Nozzle reduction		18.1	10.6	5.98	2.75	1.50										
D4	pond			3.59	2.03	1.06	0.603	0.392	0.278	0.165								
D4	stream			20.7	12.2	6.86	3.16	1.74										
D5	pond			3.59	2.04	1.07	0.606	0.395	0.281	0.169								
D5	stream			22.6	13.3	7.49	3.45	1.88										
R1	pond			3.44	1.96	1.03	0.592	0.390	0.281	0.174	3.43	1.95	1.02	0.579	0.377	0.268	0.161	
R1	stream			16.1	9.46	5.33	2.47	1.55	1.55	1.55	16.1	9.46	5.33	2.46	1.36	0.840	0.404	
R2	stream			21.6	12.7	7.15	3.30	1.82			21.6	12.7	7.15	3.30	1.82			
R3	stream			22.6	13.3	7.47	3.44	1.90	1.58	1.58	22.6	13.3	7.47	3.44	1.89	1.17	0.561	
R4	stream			16.1	9.46	5.32	4.47	4.47	4.47	4.47	16.1	9.46	5.32	2.46	1.36	1.06	1.06	
D3	ditch	50% Nozzle reduction	11.7	9.04	5.32	2.99	1.38											
D4	pond		1.64	1.81	1.04	0.550	0.318	0.214	0.157									
D4	stream		12.2	10.4	6.11	3.44	1.60											
D5	pond		1.65	1.82	1.04	0.553	0.321	0.217	0.161									
D5	stream		13.4	11.3	6.66	3.75	1.73											
R1	pond		1.58	1.75	1.01	0.541	0.319	0.220	0.166		1.74	0.995	0.531	0.306	0.207	0.153		
R1	stream		9.51	8.06	4.76	2.68	1.55	1.55	1.55		8.06	4.75	2.68	1.25	0.697	0.440		
R2	stream		12.8	10.8	6.37	3.59	1.67				10.8	6.37	3.59	1.67				
R3	stream		13.3	11.3	6.65	3.74	1.74	1.58	1.58		11.3	6.65	3.74	1.74	0.969	0.610		
R4	stream		9.51	8.05	4.75	4.47	4.47	4.47	4.47		8.05	4.75	2.68	1.25	1.06	1.06		
D3	ditch	75% Nozzle reduction	5.87	4.52	2.66	1.50												
D4	pond		0.868	0.940	0.547	0.298	0.177											
D4	stream		6.15	5.21	3.08	1.74												
D5	pond		0.871	0.943	0.550	0.301	0.180											
D5	stream		6.68	5.66	3.33	1.88												
R1	pond		0.843	0.912	0.537	0.300	0.185	0.136			0.902	0.528	0.291	0.172	0.123			
R1	stream		4.80	4.06	2.41	1.55	1.55	1.55			4.06	2.40	1.36	0.642	0.368			
R2	stream		6.42	5.44	3.22	1.82					5.44	3.22	1.82					
R3	stream		6.69	5.67	3.35	1.90	1.58	1.58			5.67	3.35	1.90	0.891	0.510			
R4	stream		4.80	4.47	4.47	4.47	4.47	4.47			4.06	2.40	2.03	1.06	1.06			
D3	ditch	90% Nozzle reduction	2.36	1.82	1.09													
D4	pond		0.409	0.425	0.256	0.148												
D4	stream		2.50	2.12	1.26													
D5	pond		0.412	0.428	0.260	0.151												
D5	stream		2.70	2.29	1.36													
R1	pond		0.406	0.421	0.261	0.158					0.412	0.251	0.148					

R1	stream		1.98	1.67	1.55	1.55	1.55				1.67	0.999	0.667	0.346				
R2	stream		2.63	2.22	1.32						2.22	1.32						
R3	stream		2.75	2.32	1.58	1.58	1.58				2.32	1.39	0.798	0.388				
R4	stream		4.47	4.47	4.47	4.47	4.47				2.03	2.03	2.03	1.06				

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.
All PECsw results for which the drift mitigation was > 95% or runoff mitigation was >90% were deleted from the PECsw results tables, as these PECsw are not considered as acceptable according to the Landscape and Mitigation guidance document.

Step 4 PECsw for cyprodinil following multiple application to apple, early application period ($DT_{50,sed}$ = 158.8 days) using the VFSMod toolb

				Mitigation options			
Vegetative strip (m)				10	20	30	35
No spray buffer (m)				10	20	30	35
Crop	Scenario	Water body	Nozzle reduction (%)	PECSW (µg/L)			
applec 3 x 375 g a.s./ha early period	R4	stream	0	9.46	2.46		

b as implemented in SWAN (v 4.01)
c the FOCUS crop pome/stone fruit (early application) was used as surrogate crop
Step 4 PECsw for cyprodinil following single application to apple, late application period (Option 1: DT50,WATER = 158.8 days)

PECSW (µg/L)	Vegetative strip (m)		-								10			20				
Scenario	Water body	No spray buffer (m)	-	5	10	15	20	25	30	40	5	10	15	20	25	30	40	45
Pome/stone crop, late applications - 1 x 375 g a.s./ha																		
D3	ditch	0% Nozzle reduction		9.28	4.14	2.09	1.28	0.876	0.653		-							
D4	pond			0.724	0.410	0.266	0.190	0.149	0.122	0.089								
D4	stream			10.8	4.81	2.44	1.50	1.03	0.759									
D5	pond			0.726	0.412	0.267	0.192	0.151	0.124	0.091								
D5	stream			11.6	5.20	2.62	1.60	1.10	0.811									
R1	pond			0.724	0.410	0.280	0.223	0.192	0.171	0.147	0.724	0.409	0.266	0.190	0.149	0.122	0.089	
R1	stream			8.29	3.73	1.90	1.17	1.17	1.17	1.17	8.29	3.73	1.90	1.17	0.807	0.601	0.381	
R2	stream			11.1	4.99	2.53	1.56	1.07	0.790		11.1	4.99	2.53	1.56	1.07	0.790		
R3	stream			11.6	5.20	2.64	1.62	1.12	0.828		11.6	5.20	2.64	1.62	1.12	0.828		
R4	stream			8.28	3.72	1.89	1.60	1.60	1.60	1.60	8.28	3.72	1.89	1.17	0.807	0.600	0.381	
D3	ditch	50% Nozzle reduction	6.87	4.64	2.07	1.06	0.656											
D4	pond		0.351	0.383	0.222	0.146	0.105	0.084	0.071									
D4	stream		6.91	5.39	2.43	1.24	0.764											
D5	pond		0.353	0.385	0.223	0.147	0.107	0.086	0.072									
D5	stream		7.45	5.81	2.60	1.33	0.816											
R1	pond		0.351	0.383	0.247	0.189	0.159	0.143	0.133		0.383	0.222	0.146	0.105	0.085	0.071		
R1	stream		5.35	4.18	1.89	1.17	1.17	1.17	1.17		4.18	1.89	0.975	0.604	0.425	0.321		

R2	stream		7.16	5.59	2.52	1.29	0.795				5.59	2.52	1.29	0.795				
R3	stream		7.45	5.82	2.63	1.35	0.833				5.82	2.63	1.35	0.833				
R4	stream		5.35	4.18	1.89	1.60	1.60	1.60	1.60		4.18	1.89	0.975	0.604	0.425	0.373		
D3	ditch	75% Nozzle reduction	3.43	2.32	1.07													
D4	pond		0.203	0.213	0.128	0.086	0.062	0.052										
D4	stream		3.50	2.73	1.24	0.644												
D5	pond		0.205	0.215	0.129	0.087	0.064	0.053										
D5	stream		3.74	2.92	1.33	0.687												
R1	pond		0.232	0.240	0.176	0.144	0.127	0.119			0.213	0.128	0.096	0.063	0.055			
R1	stream		2.73	2.13	1.17	1.17	1.17	1.17			2.13	0.983	0.528	0.323	0.276			
R2	stream		3.63	2.84	1.29	0.669					2.84	1.29	0.669					
R3	stream		3.79	2.96	1.36	0.706					2.96	1.36	0.706					
R4	stream		2.73	2.13	1.60	1.60	1.60	1.60			2.13	0.983	0.717	0.373	0.373			
D3	ditch	90% Nozzle reduction	1.45	1.00														
D4	pond		0.114	0.112	0.072	0.050	0.037											
D4	stream		1.46	1.14														
D5	pond		0.116	0.113	0.073	0.051	0.038											
D5	stream		1.55	1.22														
R1	pond		0.165	0.164	0.133	0.117	0.108				0.116	0.086	0.069	0.043				
R1	stream		1.17	1.17	1.17	1.17	1.17				0.911	0.528	0.528	0.276				
R2	stream		1.51	1.18							1.18							
R3	stream		1.60	1.25							1.25							
R4	stream		1.60	1.60	1.60	1.60	1.60				0.911	0.717	0.717	0.373				

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition. VFSmod is not validated for EU regulatory risk assessment and calculations are presented for indicative purpose only

All PECsw results for which the drift mitigation was > 95% or runoff mitigation was >90% were deleted from the PECsw results tables, as these PECsw are not considered as acceptable according to the Landscape and Mitigation guidance document.

Step 4 PECsw for cyprodinil following single multiple application to apple, late application period (Option 1: $DT_{50,\text{sed water}}$ = 158.8 days)

PECsw (µg/L)		Vegetative strip (m)	-								10			20				
Scenario	Water body	No spray buffer (m)	-	5	10	15	20	25	30	40	5	10	15	20	25	30	40	45
Pome/stone crop, late applications - 3 x 375 g a.s./ha																		
D3	ditch	0% Nozzle reduction		6.74	3.14	1.57	0.930	0.636	0.477		-							
D4	pond			1.11	0.623	0.387	0.268	0.243	0.229	0.212								
D4	stream			7.77	3.63	1.81	1.06	0.874	0.874	0.874								
D5	pond			1.16	0.652	0.406	0.282	0.219	0.179	0.131								
D5	stream			8.38	3.91	1.94	1.14	0.756	0.546									
R1	pond			1.14	0.658	0.426	0.309	0.249	0.210	0.165	1.11	0.632	0.400	0.274	0.214	0.175	0.131	0.117
R1	stream			5.99	2.81	1.41	1.32	1.32	1.32	1.32	5.99	2.81	1.41	0.833	0.561	0.409	0.313	0.313
R2	stream			8.04	3.77	1.89	1.11	0.740	0.534	0.460	8.04	3.77	1.89	1.11	0.740	0.534	0.325	0.267
R3	stream			8.38	5.06	3.67	3.09	2.82	2.67	2.51	8.38	3.91	2.46	1.38	1.10	0.937	0.774	0.729
R4	stream			5.99	2.87	2.87	2.87	2.87	2.87	2.87	5.99	2.81	1.41	0.833	0.682	0.682	0.682	0.682
D3	ditch	50% Nozzle reduction	4.92	3.38	1.61	0.833	0.507											
D4	pond		0.553	0.594	0.343	0.246	0.223	0.212	0.205									
D4	stream		4.96	3.91	1.84	0.926	0.874	0.874	0.874									
D5	pond		0.578	0.622	0.360	0.230	0.162	0.131	0.111									
D5	stream		5.32	4.19	1.97	0.988	0.585											
R1	pond		0.589	0.630	0.383	0.259	0.195	0.165	0.146		0.604	0.356	0.233	0.160	0.130	0.111	0.089	
R1	stream		3.85	3.03	1.44	1.32	1.32	1.32	1.32		3.03	1.44	0.734	0.438	0.313	0.313	0.313	
R2	stream		5.15	4.06	1.92	0.968	0.572	0.460	0.460		4.06	1.92	0.968	0.572	0.388	0.286	0.181	
R3	stream		6.07	5.27	3.68	2.98	2.69	2.56	2.48		4.22	2.48	1.76	0.967	0.823	0.744	0.662	
R4	stream		3.85	3.03	2.87	2.87	2.87	2.87	2.87		3.03	1.44	1.30	0.682	0.682	0.682	0.682	
D3	ditch	75% Nozzle reduction	2.53	1.75	0.878	0.481												
D4	pond		0.330	0.340	0.242	0.216	0.203	0.197										
D4	stream		2.52	1.99	0.952	0.874	0.874	0.874										
D5	pond		0.346	0.356	0.216	0.142	0.102	0.087										
D5	stream		2.69	2.12	1.01	0.522												
R1	pond		0.370	0.379	0.246	0.176	0.138	0.123			0.353	0.220	0.150	0.103	0.088			
R1	stream		1.98	1.57	1.32	1.32	1.32	1.32			1.57	0.757	0.598	0.313	0.313			
R2	stream		2.63	2.07	0.991	0.508	0.460	0.460			2.07	0.991	0.508	0.305	0.213			
R3	stream		4.18	3.78	2.99	2.64	2.49	2.43			2.58	1.76	1.40	0.758	0.687			
R4	stream		2.87	2.87	2.87	2.87	2.87	2.87			1.57	1.30	1.30	0.682	0.682			
D3	ditch	90% Nozzle reduction	1.16	0.830	0.467													
D4	pond		0.239	0.236	0.212	0.198	0.190											
D4	stream		1.08	0.874	0.874	0.874	0.874	0.740										
D5	pond		0.208	0.199	0.130	0.090	0.067											
D5	stream		1.15	0.904														
R1	pond		0.239	0.229	0.164	0.126	0.115				0.203	0.138	0.100	0.069				

R1	stream		1.32	1.32	1.32	1.32	1.32				0.684	0.598	0.598	0.313				
R2	stream		1.11	0.880	0.460	0.460	0.460				0.880	0.435	0.233	0.144				
R3	stream		3.05	2.89	2.57	2.43	2.37				1.66	1.33	1.19	0.633				
R4	stream		2.87	2.87	2.87	2.87	2.87				1.30	1.30	1.30	0.682				

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.
All PECsw results for which the drift mitigation was > 95% or runoff mitigation was >90% were deleted from the PECsw results tables, as these PECsw are not considered as acceptable according to the Landscape and Mitigation guidance document.

Step 4 PECsw for cyprodinil following multiple single applications to apple, late application period (Option 2: $DT_{50,WATER\ SED}$ = 158.8 days)

PECsw (µg/L)		Vegetative strip (m)	-								10			20				
Scenario	Water body	No spray buffer (m)	-	5	10	15	20	25	30	40	5	10	15	20	25	30	40	45
Pome/stone crop, late applications - 1 x 375 g a.s./ha																		
D3	ditch	0% Nozzle reduction		9.28	4.14	2.09	1.28	0.877	0.653									
D4	pond			0.725	0.411	0.266	0.191	0.150	0.122	0.090								
D4	stream			10.8	4.81	2.44	1.50	1.03	0.759									
D5	pond			0.727	0.413	0.268	0.193	0.151	0.124	0.091								
D5	stream			11.6	5.20	2.62	1.60	1.10	0.811									
R1	pond			0.725	0.411	0.285	0.227	0.195	0.174	0.149	0.725	0.410	0.266	0.191	0.149	0.122	0.090	
R1	stream			8.29	3.73	1.90	1.17	1.17	1.17	1.17	8.29	3.73	1.90	1.17	0.807	0.601	0.381	
R2	stream			11.1	4.99	2.53	1.56	1.07	0.790		11.1	4.99	2.53	1.56	1.07	0.790		
R3	stream			11.6	5.20	2.64	1.62	1.12	0.829		11.6	5.20	2.64	1.62	1.12	0.829		
R4	stream			8.29	3.73	1.90	1.60	1.60	1.60	1.60	8.29	3.73	1.90	1.17	0.807	0.600	0.381	
D3	ditch	50% Nozzle reduction	6.87	4.64	2.07	1.06	0.657											
D4	pond		0.352	0.384	0.222	0.146	0.105	0.085	0.071									
D4	stream		6.91	5.39	2.43	1.24	0.764											
D5	pond		0.354	0.386	0.224	0.148	0.107	0.086	0.073									
D5	stream		7.45	5.81	2.60	1.33	0.816											
R1	pond		0.352	0.384	0.251	0.192	0.161	0.145	0.135		0.383	0.222	0.146	0.105	0.085	0.071		
R1	stream		5.35	4.18	1.89	1.17	1.17	1.17	1.17		4.18	1.89	0.975	0.604	0.425	0.322		
R2	stream		7.16	5.59	2.52	1.29	0.795				5.59	2.52	1.29	0.795				
R3	stream		7.46	5.82	2.63	1.35	0.834				5.82	2.63	1.35	0.834				
R4	stream		5.35	4.18	1.89	1.60	1.60	1.60	1.60		4.18	1.89	0.975	0.604	0.425	0.373		
D3	ditch	75% Nozzle reduction	3.43	2.32	1.07													
D4	pond		0.204	0.214	0.128	0.086	0.063	0.052										
D4	stream		3.50	2.73	1.24	0.644												
D5	pond		0.205	0.216	0.130	0.087	0.064	0.054										
D5	stream		3.74	2.92	1.33	0.687												
R1	pond		0.237	0.245	0.178	0.146	0.128	0.120			0.214	0.131	0.098	0.064	0.056			
R1	stream		2.73	2.13	1.17	1.17	1.17	1.17			2.13	0.984	0.528	0.323	0.276			
R2	stream		3.63	2.84	1.29	0.669					2.84	1.29	0.669					
R3	stream		3.79	2.96	1.36	0.706					2.96	1.36	0.706					
R4	stream		2.73	2.13	1.60	1.60	1.60	1.60			2.13	0.983	0.717	0.373	0.373			
D3	ditch	90% Nozzle reduction	1.45	1.00														
D4	pond		0.115	0.112	0.072	0.050												
D4	stream		1.46	1.14														
D5	pond		0.116	0.114	0.073	0.051												
D5	stream		1.55	1.22														
R1	pond		0.168	0.166	0.135	0.118	0.108				0.118	0.087	0.070	0.044				

R1	stream		1.17	1.17	1.17	1.17	1.17				0.912	0.528	0.528	0.276				
R2	stream		1.51	1.18							1.18							
R3	stream		1.60	1.25							1.25							
R4	stream		1.60	1.60	1.60	1.60	1.60				0.911	0.717	0.717	0.373				

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.
All PECsw results for which the drift mitigation was > 95% or runoff mitigation was >90% were deleted from the PECsw results tables, as these PECsw are not considered as acceptable according to the Landscape and Mitigation guidance document.

Step 4 PECsw for cyprodinil following multiple applications to apple, late application period ($DT_{50,sed}$ = 158.8 days)

PECsw (µg/L)		Vegetative strip (m)	-								10			20				
Scenario	Water body	No spray buffer (m)	-	5	10	15	20	25	30	40	5	10	15	20	25	30	40	45
Pome/stone crop, late applications - 3 x 375 g a.s./ha																		
D3	ditch	0% Nozzle reduction		6.74	3.14	1.57	0.931	0.636	0.478									
D4	pond			1.16	0.652	0.405	0.281	0.251	0.235	0.217								
D4	stream			7.77	3.63	1.81	1.06	0.874	0.874	0.874								
D5	pond			1.21	0.682	0.425	0.295	0.229	0.187	0.137								
D5	stream			8.38	3.91	1.94	1.14	0.756	0.546									
R1	pond			1.18	0.686	0.445	0.323	0.260	0.220	0.174	1.16	0.658	0.416	0.285	0.222	0.182	0.136	0.121
R1	stream			5.99	2.81	1.41	1.32	1.32	1.32	1.32	5.99	2.81	1.41	0.833	0.561	0.410	0.313	0.313
R2	stream			8.04	3.77	1.89	1.11	0.740	0.534	0.460	8.04	3.77	1.89	1.11	0.740	0.534	0.325	0.267
R3	stream			8.38	5.06	3.67	3.09	2.82	2.67	2.51	8.38	3.92	2.46	1.38	1.10	0.937	0.774	0.729
R4	stream			5.99	2.87	2.87	2.87	2.87	2.87	2.87	5.99	2.81	1.41	0.833	0.682	0.682	0.682	0.682
D3	ditch	50% Nozzle reduction	4.92	3.38	1.61	0.834	0.507											
D4	pond		0.578	0.622	0.359	0.255	0.229	0.217	0.209									
D4	stream		4.96	3.91	1.84	0.927	0.874	0.874	0.874									
D5	pond		0.605	0.650	0.377	0.240	0.169	0.136	0.115									
D5	stream		5.32	4.19	1.97	0.989	0.585											
R1	pond		0.614	0.657	0.400	0.271	0.204	0.173	0.153		0.628	0.371	0.242	0.166	0.135	0.115	0.092	
R1	stream		3.85	3.04	1.44	1.32	1.32	1.32	1.32		3.04	1.44	0.734	0.438	0.313	0.313	0.313	
R2	stream		5.15	4.06	1.92	0.968	0.572	0.460	0.460		4.06	1.92	0.968	0.572	0.388	0.286	0.181	
R3	stream		6.07	5.27	3.68	2.98	2.69	2.56	2.48		4.22	2.48	1.76	0.967	0.823	0.744	0.662	
R4	stream		3.85	3.04	2.87	2.87	2.87	2.87	2.87		3.03	1.44	1.30	0.682	0.682	0.682	0.682	
D3	ditch	75% Nozzle reduction	2.53	1.75	0.879	0.482												
D4	pond		0.345	0.355	0.250	0.222	0.206	0.200										
D4	stream		2.52	1.99	0.952	0.874	0.874	0.874										
D5	pond		0.362	0.373	0.226	0.149	0.107	0.090										
D5	stream		2.69	2.12	1.01	0.522												
R1	pond		0.386	0.396	0.257	0.185	0.145	0.130			0.367	0.229	0.156	0.107	0.092			
R1	stream		1.98	1.57	1.32	1.32	1.32	1.32			1.57	0.758	0.598	0.313	0.313			
R2	stream		2.63	2.07	0.991	0.508	0.460	0.460			2.07	0.991	0.508	0.305	0.213			
R3	stream		4.18	3.78	2.99	2.64	2.49	2.43			2.58	1.76	1.40	0.758	0.687			
R4	stream		2.87	2.87	2.87	2.87	2.87	2.87			1.57	1.30	1.30	0.682	0.682			
D3	ditch	90% Nozzle reduction	1.16	0.832	0.468													
D4	pond		0.247	0.243	0.217	0.202	0.193											
D4	stream		1.08	0.874	0.874	0.874	0.874											
D5	pond		0.218	0.208	0.136	0.094	0.070											
D5	stream		1.15	0.905														
R1	pond		0.250	0.240	0.172	0.133	0.116				0.212	0.144	0.105	0.072				

R1	stream		1.32	1.32	1.32	1.32	1.32				0.684	0.598	0.598	0.313				
R2	stream		1.11	0.880	0.460	0.460	0.460				0.880	0.435	0.233	0.144				
R3	stream		3.05	2.89	2.57	2.43	2.37				1.66	1.33	1.19	0.633				
R4	stream		2.87	2.87	2.87	2.87	2.87				1.30	1.30	1.30	0.682				

Please note that STEP 4 PECsw values for pond with 5m buffer zone are higher than STEP 3 PECsw due to the influence of deposition.
All PECsw results for which the drift mitigation was > 95% or runoff mitigation was >90% were deleted from the PECsw results tables, as these PECsw are not considered as acceptable according to the Landscape and Mitigation guidance document.

PECsed accumulation

PECsed accumulation were calculated for cyprodinil and CGA249287. The method used was to take the highest PEC_{SED} from the FOCUS Step 3 model (cyprodinil) and Step 2 model (CGA249287) using the proposed endpoints and apply the sediment default DT_{50} of 1000 days for cyprodinil and its metabolite CGA249287.

The following equation from FOCUS report (1997) was used for calculations:

PECplateau = max PECsed from FOCUS modelling/(1-e-k t)

Where:
max PECsed = max PECsed at FOCUS Step 3
k = first order degradation/dissipation rate constant (ln(2)/half-life)
t = time after last application (in this case 365-14 days=351 days)

$PEC_{PLATEAU}$ for cyprodinil and CGA249287 in sediment

Crop	Application rate (g a.s./ha)	Interval (d)	Cyprodinil		CGA249287	
			Max. PEC_{SED} (µg/kg) [a]	$PEC_{PLATEAU}$ (µg/kg)	Max. PEC_{SED} (µg/kg) [b]	$PEC_{PLATEAU}$ (µg/kg)
Spring and winter barley	2 x 450	14	62.3	279	58.8	263
Apple (early appl.)	3 x 375	21	32.8	147	98.9	442

[a] Step 3 worst-case PEC_{SED} over all scenarios, single and multiple application, spring and winter cereals

[b] Step 2 worst-case PEC_{SED} over all region / season combinations, single and multiple application

Estimation of concentrations from other routes of exposure (Regulation (EU) N° 284/2013, Annex Part A, point 9.4)

Method of calculation	*Not considered*

PEC

Maximum concentration	*Not considered*

Ecotoxicology

Effects on birds and other terrestrial vertebrates (Regulation (EU) N° 283/2013, Annex Part A, point 8.1 and Regulation (EU) N° 284/2013, Annex Part A, point 10.1)

Species	Test substance	Time scale	LD_{50} / NOEL (mg /kg bw per day)	LC_{50} / NOEC (mg/kg diet)
Birds				
Anas platyrhynchos	a.s.	Acute	>500	-
Colinus virginianus	a.s.	Acute	>2000	-
Serinus canaria	a.s.	Short-term	>940	>5620
Anas platyrhynchos	a.s.	Short-term	>1534	>5200
Colinus virginianus	a.s.	Short-term	>743	>5200
Anas platyrhynchos	a.s.	Long-term	41.6	300
Mammals				
Rat	a.s.	Acute	>2000	-
Rat	A14325E (KAYAK 300 EC)	Acute	>2000	-
Rat	A8779A (UNIX 75 WG)	Acute	>2000	-
Rat	a.s.	Long-term	23	1000

Endocrine disrupting properties (Annex Part A, points 8.1.5) The ED assessment for T-modality cannot be finalised for human (refer to 2.10.1 for more details). Therefore, until further data would be available for mammals it is not possible to conclude on the ED potential of cyprodinil for wild mammals. For non-target organisms other than mammals, cyprodinil may have T-mediated activity associated to adversity on developmental parameters but the information provided is not sufficient to conclude on the actual mode of action. Therefore, for the T-modality, **the ED criteria are considered as met for non-target organisms other than mammals.** For EAS modalities, the ED criteria are considered to be met for cyprodinil for human (refer to 2.10.1 for more details). As the EAS-mediated adversity effects observed are based on parameters that can affect fertility and therefore reproduction, the effects are considered as population relevant for mammalian non-target organisms. Thus, the ED criteria for EAS modalities are met for wild mammals. For non-target organisms other than mammals, there were positive evidence of endocrine activity and the effect observed suggested endocrine adversity. In the absence of a MOA analysis or further data, taking into consideration both the mamalian and non-mamalian dataset, **the ED criteria are considered met with respect to the EAS-modalities for non-target organisms other than mammals.**
Additional higher tier studies (Annex Part A, points 10.1.1.2) Not available.
Terrestrial vertebrate wildlife (birds, mammals, reptile and amphibians) (Annex Part A, points 8.1.4, 10.1.3): Additional information on acute toxicity on tadpoles (*Xenopus laevis*) indicated that aquatic life stage of amphibians is less sensitive to cyprodinil than fish.

Toxicity/exposure ratios for terrestrial vertebrates (Regulation (EU) N° 284/2013, Part A, Annex point 10.1)

Cereals at 450 g a.s./ha [2 applications]

Growth stage	Indicator or focal species	Time scale	DDD (mg/kg bw per day)	TER	Trigger
Screening Step (Birds)					
All	Small omnivorous bird	Acute	85.8	44	10
All	Small omnivorous bird	Long-term	21.6	**1.9**	5
Tier 1 (Birds)					
BBCH 30-39	Small omnivorous bird	Long-term	1.8	23.1	5
BBCH ≥ 40	Small omnivorous bird	Long-term	1.1	37.8	5
Higher tier (birds): Not required.					
Screening Step (Mammals)					
All	Small herbivorous mammal	Acute	63.9	31	10
All	Small herbivorous mammal	Long-term	16.1	**1.4**	5
Tier 1 (Mammals)					
BBCH ≥ 20	Small insectivorous mammal “shrew”	Long-term	0.634	36.3	5
BBCH ≥ 40	Small herbivorous mammal “vole”	Long-term	7.25	**3.2**	5
BBCH 30-39	Small omnivorous mammal “mouse”	Long-term	1.3	17.7	5
BBCH ≥ 40	Small omnivorous mammal “mouse”	Long-term	0.768	29.9	5
Higher tier (Mammals): Not available					

Risk from bioaccumulation and food chain behaviour

Indicator or focal species	Time scale	DDD (mg/kg bw per day)	TER	Trigger
Earthworm-eating birds	Long-term	1.03	40	5
Earthworm-eating mammals	Long-term	1.26	18.3	5
Fish-eating birds	Long-term	0.21	197	5
Fish-eating mammals	Long-term	0.19	122	5
Higher tier: Not required.				

Risk from consumption of contaminated water

Scenarios	**Indicator or focal species**	**Time scale**	**PEC_{dw}xDWR**	**TER**	**Trigger**
Leaf scenario	Birds	acute	Not required		5
Puddle scenario, Screening step					
Application rate (g a.s./ha)/relevant endpoint <3000 (koc≥500 L/kg), TER calculation not needed					

Apples at 375 g a.s./ha [3 applications]

Growth stage	Indicator or focal species	Time scale	DDD (mg/kg bw per day)	TER	Trigger
Screening Step (Birds)					
All	Small omnivorous bird	Acute	21.1	180	10

Growth stage	Indicator or focal species	Time scale	DDD (mg/kg bw per day)	TER	Trigger
All	Small omnivorous bird	Long-term	4.7	8.8	5
Higher tier (birds): Not required.					
Screening Step (Mammals)					
All	Small herbivorous mammal	Acute	61.4	33	10
All	Small herbivorous mammal	Long-term	18.7	**1.23**	5
Tier 1 (Mammals)					
BBCH $\geq$ 40	Large herbivorous mammal “lagomorph”	Long-term	1.11	20.7	5
BBCH $\geq$ 40	Small herbivorous mammal “vole”	Long-term	5.61	**4.1**	5
BBCH $\geq$ 40	Small omnivorous mammal “mouse”	Long-term	0.59	38.7	5
BBCH 10-19	Large herbivorous mammal “lagomorph”	Long-term	2.97	7.7	5
BBCH 10-19	Small herbivorous mammal “vole”	Long-term	14.9	**1.5**	5
BBCH 10-19	Small omnivorous mammal “mouse”	Long-term	1.6	14.4	5
BBCH 20-40	Large herbivorous mammal “lagomorph”	Long-term	2.22	10.4	5
BBCH 20-40	Small herbivorous mammal “vole”	Long-term	11.2	**2.1**	5
BBCH 20-40	Small omnivorous mammal “mouse”	Long-term	1.21	18.9	5
BBCH 71-79	Frugivorous mammal “dormouse”	Long-term	5.87	**3.9**	5
Higher tier (Mammals): Not available					

Risk from bioaccumulation and food chain behaviour

Indicator or focal species	Time scale	DDD (mg/kg bw per day)	TER	Trigger
Earthworm-eating birds	Long-term	3.6	11	5
Earthworm-eating mammals	Long-term	4.39	5.2	5
Fish-eating birds	Long-term	0.16	255	5
Fish-eating mammals	Long-term	0.15	158	5
Higher tier: Not required.				

Risk from consumption of contaminated water

Scenarios	**Indicator or focal species**	**Time scale**	**PEC_{dw}xDWR**	**TER**	**Trigger**
Leaf scenario	Birds	acute	Not required		5
Puddle scenario, Screening step					
Application rate (g a.s./ha)/relevant endpoint <3000 (koc≥500 L/kg), TER calculation not needed					

Toxicity data for all aquatic tested species (Regulation (EU) N° 283/2013, Annex Part A, points 8.2 and Regulation (EU) N° 284/2013 Annex Part A, point 10.2)*

Group	Test substance	Time-scale (Test type)	End point	Toxicity[1] mg a.s./L
Laboratory tests				
Fish				
O. mykiss	a.s.	Acute 96 hr (static)	Mortality, LC_{50}	2.41 (mm)
L. macrochirus	a.s.	Acute 96 hr (static)	Mortality, LC_{50}	2.17 (mm)
C. carpio	a.s.	Acute 96 hr (semi-static)	Mortality, LC_{50}	3.0 (mm)
C. variegatus	a.s.	Acute 96 hr (flow-through)	Mortality, LC_{50}	1.25 (mm)
O. mykiss	A14325E (KAYAK 300 EC)	Acute 96 hr (static)	Mortality, LC_{50}	5.2 mg prep./L (1.55 mg a.s./L (mm))
O. mykiss	A8637C (CHORUS 50 WG)	Acute 96 hr (static, or semi-static or flow-through)	Mortality, LC_{50}	6.2 mg prep./L[2] (3.15 mg a.s./L (nom))
P. promelas	a.s.	Chronic ELS (flow-through)	Survival, Growth, NOEC	0.231 (mm)
C. variegatus	a.s.	Chronic ELS (flow-through)	Growth, NOEC	0.0406 (mm)
O. mykiss	Metabolite CGA249287	96 hr (static)	Mortality, LC_{50}	55 (nom)
O. mykiss	Metabolite CA1139A	96 hr (static)	Mortality, LC_{50}	>100 (nom)
Aquatic invertebrates				
D. magna	a.s.	48 h (flow-through)	Mortality, EC_{50}	0.033 (mm)
D. longispina	a.s.	48 h (static)	Mortality, EC_{50}	0.22 (mm)
Daphniopsis sp.	a.s.	24 h (static)	Mortality, EC_{50}	0.21 (mm)
Simocephalus vetulus	a.s.	48 h (static)	Mortality, EC_{50}	0.15 (mm)
Gammarus sp.	a.s.	48 h (static)	Mortality, EC_{50}	1.8 (mm)[2]
Thamnocephalus platyurus	a.s.	24 h (static)	Mortality, EC_{50}	0.12 (mm)
Ostracoda sp.	a.s.	48 h (static)	Mortality, EC_{50}	1.1 (mm)
Brachionus calyciflorus	a.s.	24 h (static)	Mortality, EC_{50}	>9.5 (mm)

Group	Test substance	Time-scale (Test type)	End point	Toxicity[1] mg a.s./L
Cloeon sp.	a.s.	48 h (static)	Mortality, EC_{50}	3.5 (mm)
Chaoborus sp.	a.s.	48 h (static)	Mortality, EC_{50}	4.0 (mm)
Lymnea stagnalis	a.s.	48 h (static)	Mortality, EC_{50}	2.9 (mm)
Asellus aquaticus	a.s.	48 h (static)	Mortality, EC_{50}	2.35 (nom)
Mysidopsis bahia	a.s.	96 h (flow-through)	Mortality, EC_{50}	0.00805 (mm)
Crassostrea virginica	a.s.	96 h (flow-through)	Shell deposition, EC_{50} Mortality, EC_{50}	0.36 (mm) >0.601 (mm)
D. magna	A14325E (KAYAK 300 EC)	48 h (static)	Mortality, EC_{50}	0.37 mg prep./L (0.11 mg a.s./L(nom))
D. magna	A8637C (CHORUS 50 WG)	48 h (static)	Mortality, EC_{50}	0.14 mg prep./L (0.07 mg a.s./L(nom))
D. magna	a.s.	21 d (flow-through)	Reproduction, mortality and development, NOEC	0.00816 (mm)
D. magna	Metabolite CGA249287	48 h (static)	Mortality, EC_{50}	>100 (nom)
D. magna	Metabolite CGA275535	48 h (static)	Mortality, EC_{50}	6.8 (nom)
D. magna	Metabolite CGA321915	48 h (static)	Mortality, EC_{50}	>98 (mm)
C. riparius	Metabolite CGA321915	48 h (static)	Mortality, EC_{50}	>97 (mm)
D. magna	Metabolite CGA263208 (CA1059A)	48 h (static)	Mortality, EC_{50}	20.6 (nom)
D. magna	Metabolite CA1139A	48 h (static)	Mortality, EC_{50}	15.7 (nom)
Sediment-dwelling organisms				
C. riparius	Metabolite CGA249287	28 d (static, spiked sediment)	Emergence, NOEC	12.8 mg/kg dry sediment (nom)
Algae				
Pseudokirchneriella subcapitata	a.s.	96 h (static)	Growth rate: 72h E_rC_{50} (NOEC) Biomass: 72h E_bC_{50} (NOEC)	5.2 (nom) (0.4) 2.6 (nom) (<0.4)

Group	Test substance	Time-scale (Test type)	End point	Toxicity[1] mg a.s./L
Pseudokirchneriella subcapitata	A14325E (KAYAK 300 EC)	96 h (static)	Growth rate: 96h E_rC_{50} Biomass: 96h E_bC_{50}	12.4 mg prep./L (3.7 mg a.s./L$_{(mm)}$) 5.95 mg prep./L (1.8 mg a.s./L$_{(mm)}$)
Pseudokirchneriella subcapitata	A8637C (CHORUS 50 WG)	72 h (static)	Growth rate: E_rC_{50} (NOEC) Biomass: E_bC_{50} (NOEC)	7.9 mg prep./L (4 mg a.s./L$_{(nom)}$) 4.1 mg prep./L (2.1 mg a.s./L$_{(nom)}$)
Pseudokirchneriella subcapitata	Metabolite CGA275535	72 h (static)	Growth rate: E_rC_{50} (NOEC) Biomass: E_bC_{50} (NOEC)	18 $_{(mm)}$ (3.6) 9.4 $_{(mm)}$ (<3.6)
Pseudokirchneriella subcapitata	Metabolite CGA321915	96 h (static)	Growth rate: 72h E_rC_{50} (NOEC) Biomass: 72h E_bC_{50} (NOEC)	>99 $_{(mm)}$ (99) >99 $_{(mm)}$ (45)
Scenedesmus subspicatus	Metabolite CA1139A	72 h (static)	Growth rate: E_rC_{50} (E_rC_{10}) Yield: E_yC_{50} (E_yC_{10})	4.3 $_{(mm)}$ (0.87) 1.79 $_{(mm)}$ (0.81)
Further testing on aquatic organisms				

<table>
<tr><th>Group</th><th>Test substance</th><th>Time-scale
(Test type)</th><th>End point</th><th>Toxicity[1]
mg a.s./L</th></tr>
<tr><td colspan="5"><u>Aquatic invertebrates, acute and chronic:</u>

Microcosm (report N° CMP4, 1995)
Due to the uncertainty on the level of exposure of the tested organisms and the presence of fish, the results for this microcosm study are not used to estimate any endpoints for the risk assessment.

Microcosm (K-CA 8.2.8.2/01)
A microcosm study was conducted using a 300 EC formulation A14325E with a community typical for a lentic freshwater community, containing phyto- and zooplankton and macroinvertebrates with five treatments of cyprodinil (1.5, 5, 10, 20 and 50 µg a.s./L, nominal). This study demonstrated that Asellus is the critical taxa for defining the study endpoints, due to transient effects observed at low concentration (5 µg/L; class 3a effects) and due to pronounced effects without recovery observed at high concentrations (20 and 50 µg/L). Given the similarity of the transient effects observed at 5 and 10 µg/L and that the effects at both concentrations is mainly driven by one species, the NOEAEC was set to 10 µg/L and the NOEC was set to 1.5 µg a.s./L.

ETO-RAC = 0.5 µg a.s./L (NOEC = 1.5 µg a.s./L ; AF = 3)
ERO-RAC = 2.5 µg a.s./L (NOEAEC = 10 µg a.s./L ; AF = 4)</td></tr>
<tr><td colspan="5">Potential endocrine disrupting properties (Annex Part A, point 8.2.3)

The ED assessment for T-modality cannot be finalised for human (refer to 2.10.1 for more details). Therefore, until further data would be available for mammals it is not possible to conclude on the ED potential of cyprodinil for wild mammals.
For non-target organisms other than mammals, cyprodinil may have T-mediated activity associated to adversity on developmental parameters but the information provided is not sufficient to conclude on the actual mode of action. Therefore, for the T-modality, the ED criteria are considered as met for non-target organisms other than mammals.
For EAS modalities, the ED criteria are considered to be met for cyprodinil for human (refer to 2.10.1 for more details). As the EAS-mediated adversity effects observed are based on parameters that can affect fertility and therefore reproduction, the effects are considered as population relevant for mammalian non-target organisms. Thus, the ED criteria for EAS modalities are met for wild mammals. For non-target organisms other than mammals, there were positive evidence of endocrine activity and the effect observed suggested endocrine adversity. In the absence of a MOA analysis or further data, taking into consideration both the mamalian and non-mamalian dataset, the ED criteria are considered met with respect to the EAS-modalities for non-target organisms other than mammals.</td></tr>
</table>

[1] ($_{nom}$) nominal concentration; ($_{mm}$) mean measured concentration; prep.: preparation; a.s.: active substance
[2] based on geometric mean calculation between concentrations resulting in 0 and 100% effects.

Bioconcentration in fish (Annex Part A, point 8.2.2.3)

	Cyprodinil
$logP_{O/W}$	4.0
Steady-state bioconcentration factor (BCF) (total wet weight/normalised to 5% lipid content)	72 (edible) 677 (non-edible) 393 (whole fish)
Uptake/depuration kinetics BCF (total wet weight/normalised to 5% lipid content)	-
Annex VI Trigger for the bioconcentration factor	>2000
Clearance time (days) (CT_{50})	-
(CT_{90})	-
Level and nature of residues (%) in organisms after the 14 day depuration phase	-

Toxicity/exposure ratios for the most sensitive aquatic organisms (Regulation (EU) N° 284/2013, Annex Part A, point 10.2)

FOCUS$_{sw}$ step 1-3 – PEC/RAC ratios for Cyprodinil – Winter Cereals at 1 x 450 g a.s./ha,

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae
		Cyprinodon variegatus	*Cyprinodon variegatus*	*Mysidopsis bahia*	*Daphnia magna*	*Pseudokirchneriella subcapitata*
		RAC	*RAC*	*RAC*	*RAC*	*RAC*
		12.5 µg/L	*4.06 µg/L*	*0.0805 µg/L*	*0.816 µg/L*	*520* µg/L
FOCUS Step 1	*50.1*	***4.0***	***12***	***622***	***61.4***	*0.1*
FOCUS Step 2						
North Europe	*8.8*	*0.70*	***2.2***	***109***	***10.8***	-
South Europe	*16*	***1.28***	***3.9***	***199***	***19.6***	-
FOCUS Step 3						

D1 / ditch	*3.25*	*0.26*	*0.80*	***40***	***4***	-
D1 / stream	*2.52*	*0.20*	*0.62*	***31***	***3.1***	-
D2 / ditch	*3.28*	*0.26*	*0.81*	***41***	***4***	-
D2 / stream	*2.77*	*0.22*	*0.68*	***34***	***3.4***	-
D3 / ditch	*2.84*	*0.23*	*0.70*	***35***	***3.5***	-
D4 / pond	*0.098*	*0.01*	*0.024*	***1.2***	*0.12*	-
D4 / stream	*2.37*	*0.19*	*0.58*	***29***	***2.9***	-
D5 / pond	*0.10*	*0.01*	*0.025*	***1.2***	*0.12*	-
D5 / stream	*2.51*	*0.20*	*0.62*	***31***	***3.1***	-
D6 / ditch	*2.84*	*0.23*	*0.70*	***35***	***3.5***	-
R1 / pond	*0.186*	*0.01*	*0.046*	***2.3***	*0.23*	-
R1 / stream	*1.87*	*0.15*	*0.46*	***23***	***2.3***	-
R3 / stream	*2.65*	*0.21*	*0.65*	***33***	***3.3***	-
R4 / stream	*1.88*	*0.15*	*0.46*	***23***	***2.3***	-
Trigger		*1*	*1*	*1*	*1*	*1*

FOCUS$_{sw}$ step 1-3 – PEC/RAC ratios for Cyprodinil – Winter Cereals at 2 x 450 g a.s./ha,

Scenario	**PEC global max (µg L)**	**fish acute**	**fish chronic**	**Aquatic invertebrates**	**Aquatic invertebrates prolonged**	**Algae**
		Cyprinodon variegatus	*Cyprinodon variegatus*	*Mysidopsis bahia*	*Daphnia magna*	*Pseudokirchneriella subcapitata*
		RAC	*RAC*	*RAC*	*RAC*	*RAC*
		12.5 µg/L	*4.06 µg/L*	*0.0805 µg/L*	*0.816 µg/L*	520 µg/L
FOCUS Step 1	*100*	***8.0***	***25***	***1242***	***123***	*0.19*
FOCUS Step 2						
North Europe	*16.6*	***1.33***	***4.1***	***206***	***20***	-
South Europe	*30.3*	***2.42***	***7.5***	***376***	***37***	-

FOCUS Step 3						
D1 / ditch	4.29	0.34	**1.1**	**53**	**5.3**	-
D1 / stream	2.19	0.18	0.54	**27**	**2.7**	-
D2 / ditch	6.43	0.51	**1.6**	**80**	**7.9**	-
D2 / stream	4.02	0.32	0.99	**50**	**4.9**	-
D3 / ditch	2.49	0.20	0.61	**31**	**3.1**	-
D4 / pond	0.149	0.01	0.037	**1.9**	0.18	-
D4 / stream	2.1	0.17	0.52	**26**	**2.6**	-
D5 / pond	0.139	0.011	0.034	**1.7**	0.17	-
D5 / stream	2.29	0.18	0.56	**28**	**2.8**	-
D6 / ditch	2.5	0.20	0.62	**31**	**3.1**	-
R1 / pond	0.481	0.038	0.12	**6.0**	0.59	-
R1 / stream	2.99	0.24	0.74	**37**	**3.7**	-
R3 / stream	2.33	0.19	0.57	**29**	**2.9**	-
R4 / stream	1.85	0.15	0.46	**23**	**2.3**	-
Trigger		1	1	1	1	1

FOCUS$_{sw}$ step 1-3 – PEC/RAC ratios for Cyprodinil – Spring Cereals at 1 x 450 g a.s./ha,

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae
		Cyprinodon variegatus	*Cyprinodon variegatus*	*Mysidopsis bahia*	*Daphnia magna*	*Pseudokirchneriella subcapitata*
		RAC	RAC	RAC	RAC	RAC
		12.5 µg/L	4.06 µg/L	0.0805 µg/L	0.816 µg/L	520 µg/L
FOCUS Step 1	50.1	**4.0**	**12**	**622**	**61.4**	0.1
FOCUS Step 2						
North Europe	8.8	0.70	**2.2**	**109**	**10.8**	-

South Europe	*16*	***1.28***	***3.9***	***199***	***19.6***	-
FOCUS Step 3						
D1 / ditch	*3.46*	*0.28*	*0.85*	***43***	***4.2***	-
D1 / stream	*2.53*	*0.20*	*0.62*	***31***	***3.1***	-
D3 / ditch	*2.85*	*0.23*	*0.70*	***35***	***3.5***	-
D4 / pond	*0.098*	*0.01*	*0.024*	***1.2***	*0.12*	-
D4 / stream	*2.33*	*0.19*	*0.57*	***29***	***2.9***	-
D5 / pond	*0.1*	*0.01*	*0.025*	***1.2***	*0.12*	-
D5 / stream	*2.47*	*0.20*	*0.61*	***31***	***3***	-
R4 / stream	*1.94*	*0.16*	*0.48*	***24***	***2.4***	-
Trigger		*1*	*1*	*1*	*1*	*1*

FOCUS$_{sw}$ step 1-3 – PEC/RAC ratios for Cyprodinil – Spring Cereals at 2 x 450 g a.s./ha,

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae
		Cyprinodon variegatus	*Cyprinodon variegatus*	*Mysidopsis bahia*	*Daphnia magna*	*Pseudokirchneriella subcapitata*
		RAC	*RAC*	*RAC*	*RAC*	*RAC*
		12.5 µg/L	*4.06 µg/L*	*0.0805 µg/L*	*0.816 µg/L*	*520 µg/L*
FOCUS Step 1	*100*	***8.0***	***25***	***1242***	***123***	*0.19*
FOCUS Step 2						
North Europe	*16.6*	***1.33***	***4.1***	***206***	***20***	-
South Europe	*30.3*	***2.42***	***7.5***	***376***	***37***	-
FOCUS Step 3						
D1 / ditch	*4.79*	*0.38*	***1.2***	***60***	***5.9***	**-**
D1 / stream	*2.21*	*0.18*	*0.5*	***27***	***2.7***	**-**
D3 / ditch	*2.49*	*0.20*	*0.54*	***31***	***3.1***	**-**
D4 / pond	*0.179*	*0.01*	*0.044*	***2.2***	*0.17*	**-**
D4 / stream	*2.12*	*0.17*	*0.52*	***26***	***2.6***	**-**

D5 / pond	*0.138*	*0.01*	*0.034*	***1.7***	*0.17*	-
D5 / stream	*2.15*	*0.17*	*0.53*	***27***	***2.6***	-
R4 / stream	*2.01*	*0.16*	*0.50*	***25***	***2.5***	-
Trigger		*1*	*1*	*1*	*1*	*1*

FOCUS$_{sw}$ step 1-3 – PEC/RAC ratios for Cyprodinil – Apples at 1 x 375 g a.s./ha, early applications

Scenario	**PEC global max (µg L)**	**fish acute**	**fish chronic**	**Aquatic invertebrates**	**Aquatic invertebrates prolonged**	**Algae**
		Cyprinodon variegatus	*Cyprinodon variegatus*	*Mysidopsis bahia*	*Daphnia magna*	*Pseudokirchneriella subcapitata*
		RAC	*RAC*	*RAC*	*RAC*	*RAC*
		12.5 µg/L	4.06 µg/L	0.0805 µg/L	*0.816 µg/L*	*520* µg/L
FOCUS Step 1	*74.8*	***6.0***	***18***	***930***	***92***	*0.14*
FOCUS Step 2						
North Europe	*36.5*	***2.9***	***9.0***	***450***	***45***	-
South Europe	*36.5*	***2.9***	***9.0***	***450***	***45***	-
FOCUS Step 3						
D3 / ditch	*29.1*	***2.3***	***7.2***	***360***	***36***	-
D4 / pond	*1.77*	*0.14*	*0.44*	***22***	***2.2***	-
D4 / stream	*29.6*	***2.4***	***7.3***	***370***	***36***	-
D5 / pond	*1.77*	*0.14*	*0.44*	***22***	***2.2***	-
D5 / stream	*28.8*	***2.3***	***7.1***	***360***	***35***	-
R1 / pond	*1.76*	*0.14*	*0.43*	***22***	***2.2***	-
R1 / stream	*23.5*	***1.9***	***5.8***	***290***	***29***	-
R2 / stream	*31.1*	***2.5***	***7.7***	***390***	***38***	-
R3 / stream	*33.2*	***2.7***	***8.2***	***410***	***41***	-
R4 / stream	*23.6*	***1.9***	***5.8***	***290***	***29***	-
Trigger		*1*	*1*	*1*	*1*	*1*

FOCUS$_{sw}$ step 1-3 – PEC/RAC ratios for Cyprodinil – Apples at 3 x 375 g a.s./ha, early applications

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae
		Cyprinodon variegatus	*Cyprinodon variegatus*	*Mysidopsis bahia*	*Daphnia magna*	*Pseudokirchneriella subcapitata*
		RAC	*RAC*	*RAC*	*RAC*	*RAC*
		12.5 µg/L	4.06 µg/L	0.0805 µg/L	*0.816 µg/L*	*520* µg/L
FOCUS Step 1	*224*	*18*	*55*	*2800*	***275***	*0.43*
FOCUS Step 2						
North Europe	*50.8*	*4.1*	*13*	*630*	***62***	-
South Europe	*64.0*	*5.1*	*16*	*800*	***78***	-
FOCUS Step 3						
D3 / ditch	*23.5*	***1.9***	***5.8***	***290***	***29***	-
D4 / pond	*3.14*	*0.25*	*0.77*	***39***	***3.9***	-
D4 / stream	*24.4*	***2.0***	***6.0***	***300***	***30***	-
D5 / pond	*3.15*	*0.25*	*0.78*	***39***	***3.9***	-
D5 / stream	*26.7*	***2.1***	***6.6***	***330***	***33***	-
R1 / pond	*3.02*	*0.24*	*0.74*	***38***	***3.7***	-
R1 / stream	*18.9*	***1.5***	***4.7***	***230***	***23***	-
R2 / stream	*25.3*	***2.0***	***6.2***	***310***	***31***	-
R3 / stream	*26.6*	***2.1***	***6.6***	***330***	***33***	-
R4 / stream	*18.9*	***1.5***	***4.7***	***230***	***23***	-
Trigger		*1*	*1*	*1*	*1*	*1*

$FOCUS_{sw}$ step 1-3 – PEC/RAC ratios for Cyprodinil – Apples at 1 x 375 g a.s./ha, late applications

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae
		Cyprinodon variegatus	*Cyprinodon variegatus*	*Mysidopsis bahia*	*Daphnia magna*	*Pseudokirchneriella subcapitata*
		RAC	*RAC*	*RAC*	*RAC*	*RAC*
		12.5 µg/L	4.06 µg/L	0.0805 µg/L	*0.816 µg/L*	*520* µg/L
FOCUS Step 1	*74.8*	***6.0***	***18***	***930***	***92***	*0.14*
FOCUS Step 2						
North Europe	***36.5***	***2.9***	***9***	***450***	***45***	-
South Europe	***36.5***	***2.9***	***9***	***450***	***45***	-
FOCUS Step 3						
D3 / ditch	*13.8*	***1.1***	***3.4***	***170***	***17***	-
D4 / pond	*0.615*	*0.05*	*0.15*	***7.6***	*0.75*	-
D4 / stream	*13.8*	***1.1***	***3.4***	***170***	***17***	-
D5 / pond	*0.617*	*0.05*	*0.15*	***7.7***	*0.76*	-
D5 / stream	*14.9*	***1.2***	***3.7***	***190***	***18***	-
R1 / pond	*0.616*	*0.05*	*0.15*	***7.6***	*0.75*	-
R1 / stream	*10.6*	*0.85*	***2.6***	***130***	***13***	-
R2 / stream	*14.1*	***1.1***	***3.5***	***180***	***17***	-
R3 / stream	*14.9*	***1.2***	***3.7***	***190***	***18***	-
R4 / stream	*10.6*	*0.85*	***2.6***	***130***	***13***	-
Trigger		*1*	*1*	*1*	*1*	*1*

FOCUS$_{sw}$ step 1-3 – PEC/RAC ratios for Cyprodinil – Apples at 3 x 375 g a.s./ha, late applications

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae

		Cyprinodon variegatus	*Cyprinodon variegatus*	*Mysidopsis bahia*	*Daphnia magna*	*Pseudokirchneriella subcapitata*
		RAC	*RAC*	*RAC*	*RAC*	*RAC*
		12.5 µg/L	*4.06 µg/L*	*0.0805 µg/L*	*0.816 µg/L*	520 µg/L
FOCUS Step 1	*224*	***18***	***55***	***2800***	***275***	*0.43*
FOCUS Step 2						
North Europe	*50.8*	***4.1***	***13***	***630***	***62***	-
South Europe	*56.1*	***4.5***	***14***	***700***	***69***	-
FOCUS Step 3						
D3 / ditch	*9.84*	*0.79*	***2.4***	***120***	***12***	-
D4 / pond	*0.948*	*0.08*	*0.2*	***12***	***1.2***	-
D4 / stream	*9.85*	*0.79*	***2.4***	***120***	***12***	-
D5 / pond	*0.988*	*0.08*	*0.2*	***12***	***1.2***	-
D5 / stream	*10.6*	*0.85*	***2.6***	***130***	***13***	-
R1 / pond	*0.977*	*0.08*	*0.2*	***12***	***1.2***	-
R1 / stream	*7.53*	*0.60*	***1.9***	***94***	***9.2***	-
R2 / stream	*10.1*	*0.81*	***2.5***	***130***	***12.4***	-
R3 / stream	*10.6*	*0.85*	***2.6***	***130***	***13***	-
R4 / stream	*7.53*	*0.60*	***1.9***	***94***	***9.2***	-
Trigger		*1*	*1*	*1*	*1*	*1*

Refinement of acute risk assessment for aquatic invertebrates

FOCUS$_{sw}$ step 3 – PEC/RAC ratios for Cyprodinil –Winter and spring Cereals at 1 and 2 x 450 g a.s./ha,

Organisms Aquatic invertebrates SSD (13 species)	
Toxicity endpoint: 3.85 µg/L (SSD-RAC)	

Crop	Scenario	Application scenarios for A14325E in cereals			
		1 x 450 g a.s./ha		2 x 450 g a.s./ha	
		PEC (µg/L)	PEC/RAC ratio	PEC (µg/L)	PEC/RAC ratio
Winter cereals	D1 ditch	3.25	0.84	4.29	**1.1**
	D1 stream	2.52	0.65	2.19	0.6
	D2 ditch	3.28	0.85	6.43	**1.7**
	D2 stream	2.77	0.72	4.02	**1.0**
	D3 ditch	2.84	0.74	2.49	0.6
	D4 pond	0.098	0.03	0.149	0.0
	D4 stream	2.37	0.62	2.1	0.5
	D5 pond	0.1	0.03	0.139	0.04
	D5 stream	2.51	0.65	2.29	0.6
	D6 ditch	2.84	0.74	2.5	0.6
	R1 pond	0.186	0.05	0.481	0.1
	R2 stream	1.87	0.49	2.99	0.8
	R3 stream	2.65	0.69	2.33	0.6
	R4 stream	1.88	0.49	1.85	0.5
Spring cereals	D1 ditch	3.46	0.90	4.79	**1.2**
	D1 stream	2.53	0.66	2.21	0.6
	D3 ditch	2.85	0.74	2.49	0.6
	D4 pond	0.098	0.03	0.179	0.05
	D4 stream	2.33	0.61	2.12	0.6
	D5 pond	0.1	0.03	0.138	0.04
	D5 stream	2.47	0.64	2.15	0.6
	R4 stream	1.94	0.50	2.01	0.5

FOCUS$_{sw}$ step 4 – PEC/RAC ratios for Cyprodinil –Winter and spring Cereals at 1 and 2 x 450 g a.s./ha,

Organisms Aquatic invertebrates SSD (13 species)

Toxicity endpoint: 3.85 µg/L (SSD-RAC)

Crop		Vegetative strip (m)	5 m non-spray buffer zone (corresponding to ≤ 95 % drift reduction)		Trigger
	FOCUS Step 4		**PEC$_{SW}$ (µg/L)**	**PEC/RAC ratio**	
Winter cereals 2 x 450 g a.s./ha	D1 / ditch	None	2.04	0.53	1
	D2 / ditch	None	6.43	**1.67**	
	D2 / stream	None	4.02	**1.04**	
Spring cereals 2 x 450 g a.s./ha	**FOCUS Step 4**				
	D1 / ditch	None	2.77	0.72	1

FOCUS$_{sw}$ step 3 – PEC/RAC ratios for Cyprodinil – Apples (early/late) at single and multiple applications at 375 g a.s./ha,

Organisms Aquatic invertebrates SSD (13 species)

Toxicity endpoint: 3.85 µg/L (SSD-RAC)

Application timing	Scenario	Number of applications			
		1 × 375 g a.s./ha		3 × 375 g a.s./ha	
		PEC (µg/L)	PEC/RAC ratio	PEC (µg/L)	PEC/RAC ratio
'Early'	D3 ditch	29.1	**7.6**	23.5	**6.1**
	D4 pond	1.77	0.5	3.14	0.8
	D4 stream	29.6	**7.7**	24.4	**6.3**
	D5 pond	1.77	0.5	3.15	0.8
	D5 stream	28.8	**7.5**	26.7	**6.9**
	R1 pond	1.76	0.5	3.02	0.8
	R1 stream	23.5	**6.1**	18.9	**4.9**
	R2 stream	31.1	**8.1**	25.3	**6.6**
	R3 stream	33.2	**8.6**	26.6	**6.9**
	R4 stream	23.6	**6.1**	18.9	**4.9**
'Late'	D3 ditch	13.8	**3.6**	9.84	**2.6**
	D4 pond	0.615	0.2	0.948	0.2
	D4 stream	13.8	**3.6**	9.85	**2.6**
	D5 pond	0.617	0.2	0.988	0.3
	D5 stream	14.9	**3.9**	10.6	**2.8**
	R1 pond	0.616	0.2	0.977	0.3
	R1 stream	10.6	**2.8**	7.53	**2.0**
	R2 stream	14.1	**3.7**	10.1	**2.6**
	R3 stream	14.9	**3.9**	10.6	**2.8**
	R4 stream	10.6	**2.8**	7.53	**2.0**

FOCUS$_{sw}$ step 4 – PEC/RAC ratios for Cyprodinil – Apples at 1 x375 g a.s./ha, early application

Organisms Aquatic invertebrates SSD
(13 species)

Toxicity endpoint: 3.85 µg/L (SSD-RAC)

Scenario	Mitigation options: Vegetative strip (m)	Nozzle reduction (%)	Non-spray buffer zone (corresponding to ≤ 95 % drift reduction): - PECsw (µg/L)	- PEC/RAC ratio	5 m PECsw (µg/L)	5 m PEC/RAC ratio	10 m PECsw (µg/L)	10 m PEC/RAC ratio	15 m PECsw (µg/L)	15 m PEC/RAC ratio	20 m PECsw (µg/L)	20 m PEC/RAC ratio	Trigger
D3 / ditch	-	0	-	--	22.8	**5.92**	14	**3.6**	6.3	**1.6**	3.2	0.8	1
		50	14.5	**3.8**	11.4	**2.96**	7.01	**1.8**	3.15	0.8	1.6	0.4	
		75	7.26	**1.9**	5.7	**1.48**	3.5	0.9	-	--	-	--	
		90	2.9	0.8	2.28	0.59	-	--	-	--	-	--	
D4 / stream	-	0	-	--	25.5	**6.62**	15.7	**4.1**	7.06	**1.8**	3.6	0.9	1
		50	14.9	**3.9**	12.8	**3.32**	7.86	**2.0**	3.55	0.9	-	--	
		75	7.48	**1.9**	6.42	**1.67**	3.95	**1.0**	-	--	-	--	
		90	3.04	0.8	2.61	0.68	-	--	-	--	-	--	
D5 / stream	-	0	-	--	24.8	**6.44**	15.2	**3.9**	6.85	**1.8**	3.49	0.9	1
		50	14.4	**3.7**	12.4	**3.22**	7.62	**2.0**	3.43	0.9	-	--	
		75	7.24	**1.9**	6.21	**1.61**	3.82	1.0	-	--	-	--	
		90	2.91	0.8	2.5	0.65	-	--	-	--	-	--	
R1 / stream	0	0	-	--	20.2	**5.25**	12.4	**3.2**	5.61	**1.5**	2.86	0.7	1
		50	11.8	**3.1**	10.2	**2.65**	6.24	**1.6**	2.82	0.7	1.45	0.4	
		75	5.95	**1.5**	5.1	**1.32**	3.14	0.8	-	--	-	--	
		90	2.44	0.6	2.09	0.54	-	--	-	--	-	--	
R2 / stream	0	0	--	--	26.8	**6.96**	16.5	**4.3**	7.42	**1.9**	3.78	1.0	1
		50	15.6	**4.1**	13.4	**3.48**	8.25	**2.1**	3.73	1.0	-	--	
		75	7.85	**2.0**	6.74	**1.75**	4.15	**1.1**	-	--	-	--	
		90	3.18	0.8	2.73	0.71	-	--	-	--	-	--	
R3 / stream	0	0	--	--	28.6	**7.43**	17.6	**4.6**	7.9	**2.1**	4.02	**1.0**	1
		50	16.6	**4.3**	14.3	**3.71**	8.78	**2.3**	3.96	**1.0**	-	--	
		75	8.34	**2.2**	7.16	**1.86**	4.41	**1.1**	-	--	-	--	

		90	3.4	0.9	2.91	0.76	1.8	0.5	-	--	-	--	
R4 / stream	0	0	--	--	20.4	**5.30**	12.5	**3.2**	5.63	**1.5**	2.87	0.7	1
		50	11.9	**3.1**	10.2	**2.65**	6.27	**1.6**	2.84	0.7	-	--	
		75	5.98	**1.6**	5.13	**1.33**	3.16	0.8	-	--	-	--	
		90	2.44	0.6	2.1	0.55	-	--	-	--	-	--	

FOCUS$_{sw}$ step 4 – PEC/RAC ratios for Cyprodinil – Apples at 3 x375 g a.s./ha, early application

Organisms Aquatic invertebrates SSD (13 species)

Toxicity endpoint: 3.85 µg/L (SSD-RAC)

Scenario	Mitigation options	Nozzle reduction (%)	Non-spray buffer zone (corresponding to ≤ 95 % drift reduction)										Trigger
	Vegetative strip (m)		FOCUS Step 3		5 m		10 m		15 m		20 m		
			PECsw (µg/L)	PEC/RAC ratio	PECsw (µg/L)	PEC/RAC ratio	PECsw (µg/L)	PEC/RAC ratio	PECsw (µg/L)	PEC/RAC ratio	PECsw (µg/L)	PEC/RAC ratio	
D3 / ditch	-	0	--	--	18.1	**4.70**	10.6	**2.75**	5.98	**1.55**	2.75	0.71	1
		50	11.8	**3.06**	9.04	**2.35**	5.32	**1.38**	2.99	0.78	-	--	
		75	5.87	**1.52**	4.52	**1.17**	2.66	0.69	-	--	-	--	
		90	2.36	0.61	-	--	-	--	-	--	-	--	
D4 / stream	-	0	--	--	20.7	**5.38**	12.2	**3.17**	6.86	**1.78**	3.16	0.82	1
		50	12.2	**3.17**	10.4	**2.70**	6.11	**1.59**	3.44	0.89	-	--	
		75	6.15	**1.60**	5.21	**1.35**	3.08	0.80	-	--	-	--	
		90	2.5	0.65	2.12	0.55	-	--	-	--	-	--	
D5 / stream	-	0	--	--	22.6	**5.87**	13.3	**3.45**	7.49	**1.95**	3.45	0.90	1
		50	13.4	**3.48**	11.3	**2.94**	6.66	**1.73**	3.75	0.97	-	--	
		75	6.68	**1.74**	5.66	**1.47**	3.33	0.86	-	--	-	--	
		90	2.7	0.70	2.29	0.59	-	--	-	--	-	--	
R1 / stream	0	0	--	--	16.1	**4.18**	9.46	**2.46**	5.33	**1.38**	2.47	0.64	1
		50	9.51	**2.47**	8.06	**2.09**	4.76	**1.24**	2.68	0.70	-	--	
		75	4.8	**1.25**	4.06	**1.05**	2.41	0.63	1.55	0.40	-	--	
	0	0	-	--	21.6	**5.61**	12.7	**3.30**	7.15	**1.86**	3.3	0.86	1

R2 / stream		50	12.8	**3.32**	10.8	**2.81**	6.37	**1.65**	3.59	0.93	-	--	
		75	6.42	**1.67**	5.44	**1.41**	3.22	0.84	-	--	-	--	
		90	2.63	0.68	2.22	0.58	-	--	-	--	-	--	
R3 / stream	0	0	-	--	22.6	**5.87**	13.3	**3.45**	7.47	**1.94**	3.44	0.89	1
		50	13.3	**3.45**	11.3	**2.94**	6.65	**1.73**	3.74	0.97	-	--	
		75	6.69	**1.74**	5.67	**1.47**	3.35	0.87	-	--	-	--	
		90	2.75	0.71	2.32	0.60	-	--	-	--	--	--	
R4 / stream	0	0	-	--	16.1	**4.18**	9.46	**2.46**	5.32	**1.38**	4.47	**1.16**	1
		50	9.51	**2.47**	8.05	**2.09**	4.75	**1.23**	4.47	**1.16**	-	--	
		75	4.8	**1.25**	4.47	**1.16**	-	--	-	--	-	--	

FOCUS$_{sw}$ step 4 – PEC/RAC ratios for Cyprodinil – Apples at 1 x375 g a.s./ha, late application

Organisms Aquatic invertebrates SSD
(13 species)

Toxicity endpoint: 3.85 µg/L (SSD-RAC)

Scenario	**Mitigation options**	**Nozzle reduction (%)**	**Non-spray buffer zone (corresponding to ≤ 95 % drift reduction)**								**Trigger**
	Vegetative strip (m)		**-**		**5 m**		**10 m**		**15 m**		
			PECsw (µg/L)	**PEC/RAC ratio**	**PECsw (µg/L)**	**PEC/RAC ratio**	**PECsw (µg/L)**	**PEC/RAC ratio**	**PECsw (µg/L)**	**PEC/RAC ratio**	
D3 / ditch	-	0	-	-	9.28	**2.41**	4.14	**1.08**	-	-	1
		50	6.87	**1.78**	4.64	**1.21**	-	--	-	-	
		75	3.43	0.89	-	--	-	--	-	-	
D4 / stream	-	0	-	--	10.8	**2.81**	4.81	**1.25**	-	-	1
		50	6.91	**1.79**	5.39	**1.40**	2.43	0.63	-	-	
		75	3.5	0.91	2.73	0.71	-	--	-	-	
D5 / stream	-	0	-	--	11.6	**3.01**	5.2	**1.35**	2.62	0.68	1
		50	7.45	**1.94**	5.81	**1.51**	2.6	0.68	-		
		75	3.74	0.97	2.92	0.76	-	--	-		
	0	0	-	--	8.29	**2.15**	3.73	0.97	-		1

R1 / stream		50	5.35	**1.39**	4.18	**1.09**	-	--	-		
		75	2.73	0.71	-	--	-	--	-		
	10-déc	0	-	--	8.29	**2.15**	3.73	0.97	-		
		50	-	--	4.18	**1.09**	-	--	-		
R2 / stream	0	0	-	--	11.1	**2.88**	4.99	**1.30**	2.53	0.66	1
		50	7.16	**1.86**	5.59	**1.45**	2.52	0.65	-	--	
		75	3.63	0.94	2.84	0.74	-	--	-	--	
	10-déc	0	-	--	11.1	**2.88**	4.99	**1.30**	2.53	0.66	
		50	-	--	5.59	**1.45**	2.52	0.65	-	--	
		75	-	--	2.84	0.74	-	--	-	--	
R3 / stream	0	0	-	--	11.6	**3.01**	5.2	**1.35**	2.64	0.69	1
		50	7.46	**1.94**	5.82	**1.51**	2.63	0.68	1.35	0.35	
		75	3.79	0.98	2.96	0.77	1.36	0.35	0.706	0.18	
R4 / stream	0	0	-	--	8.29	**2.15**	3.73	0.97	-	-	1
		50	5.35	**1.39**	4.18	**1.09**	-	--	-	-	
		75	2.73	0.71	-	--	-	--	-	-	

FOCUS$_{sw}$ step 4 – PEC/RAC ratios for Cyprodinil – Apples at 3 x375 g a.s./ha, late application

Organisms Aquatic invertebrates SSD (13 species)

Toxicity endpoint: 3.85 µg/L (SSD-RAC)

Scenario	**Mitigation options**	**Nozzle reduction (%)**	**Non-spray buffer zone (corresponding to ≤ 95 % drift reduction)**								**Trigger**
	Vegetative strip (m)		**-**		**5 m**		**10 m**		**15 m**		
			PECsw (µg/L)	**PEC/RAC ratio**	**PECsw (µg/L)**	**PEC/RAC ratio**	**PECsw (µg/L)**	**PEC/RAC ratio**	**PECsw (µg/L)**	**PEC/RAC ratio**	
D3 / ditch	-	0	-	-	6.74	**1.75**	3.14	0.82	-	-	1
		50	4.92	**1.28**	3.38	0.88	-	--	-	-	
D4 / stream	-	0	-	--	7.77	**2.02**	3.63	0.94	-	-	1
		50	4.96	**1.29**	3.91	**1.02**	-	--	-	-	
		75	2.52	0.65	-	--	-	--	-	-	

D5 / stream	-	0	-	**--**	8.38	**2.18**	3.91	1.02	-	-	1
		50	5.32	**1.38**	4.19	**1.09**	-	--	-	-	
		75	2.69	0.70	-	**--**	-	--	-	-	
R1 / stream	0	0	-	**--**	5.99	**1.56**	2.81	0.73	-	-	1
		50	3.85	1.00	3.04	0.79	-	--	-	-	
R2 / stream	0	0	-	**--**	8.04	**2.09**	3.77	0.98	-	-	1
		50	5.15	**1.34**	4.06	**1.05**	-	--	-	-	
		75	2.63	0.68	-	**--**	-	--	-	-	
R3 / stream	0	0	-	**--**	8.38	**2.18**	5.06	1.31	3.67	0.95	1
		50	6.07	**1.58**	5.27	**1.37**	3.68	0.96	-	-	
		75	4.18	**1.09**	3.78	0.98	-	--	-	-	
R4 / stream	0	0	-	**--**	5.99	**1.56**	2.87	0.75	-	-	1
		50	3.85	1.00	3.04	0.79	-	--	-	-	

FOCUS$_{sw}$ step 2 – PEC/RAC ratios for metabolites – Winter/Spring Cereals at 1 and 2 x 450 g a.s./ha,

Test organism	Substance	Tier 1-RAC (µg/L)	Max PEC_{SW} [µg/L]	PEC/RAC ratio
Oncorhynchus mykiss	CGA249287	550	13.87	0.025
	CA1139A	1000	7.31	0.007
	CGA048109*	1.25	8.21	**6.6**
Daphnia magna	CGA249287	>1 000	13.87	<0.014
	CGA275535	68	0.05	0.0007
	CGA321915	>980	3.11	<0.003
	CGA263208	206	7.31	0.035
	CA1139A	157	7.31	0.047
Mysidopsisbahia	CGA048109*	0.00805	8.21	**1020**
Chironomus riparius	CGA321915	970	3.11	0.003
Chironomus riparius	CGA249287	1280 µg/kg	46.86 µg/kg	0.037
Pseudokirchneriella subcapitata	CGA275535	1 800	0.05	0.00003
	CGA321915	>9 900	3.11	<0.0003
	CGA048109*	18.9	8.21	0.43
Scenedesmus subspicatus	CA1139A	430	7.31	0.017

* Considered as 10 times more toxic than the parent.

$FOCUS_{sw}$ step 2 – PEC/RAC ratios for metabolites – Apples at 1 and 3 x 375 g a.s./ha, early/late application

Test organism	Substance	Tier 1-RAC (µg/L)	Max PEC_{SW} [µg/L]	PEC/RAC
Oncorhynchus mykiss	CGA249287	550	20.5	0.037
	CA1139A	1000	11.74	0.01
	CGA048109*	1.25	13.17	**10.5**
Daphnia magna	CGA249287	>1 000	20.5	< 0.020
	CGA275535	68	0.03	0.0004
	CGA321915	>980	2.46	< 0.003
	CGA263208	206	11.74	0.06
	CA1139A	157	11.74	0.07
	CGA048109*	0.00805	13.17	**1636**
Chironomus riparius	CGA321915	970	2.46	0.003
Chironomus riparius	CGA249287	1280 µg/kg	66.25 µg/kg	0.052
Pseudokirchneriella subcapitata	CGA275535	1 800	0.03	0.00002
	CGA321915	>9 900	2.46	<0.0002
	CGA048109*	18.9	13.17	0.62
Scenedesmus subspicatus	CA1139A	430	11.74	0.03

* Considered as 10 times more toxic than the parent.

Effects on bees (Regulation (EU) N° 283/2013, Annex Part A, point 8.3.1 and Regulation (EU) N° 284/2013 Annex Part A, point 10.3.1)

Species	Test substance	Time scale/type of endpoint	End point	toxicity
Apis mellifera	Cyrodinil (tested as UNIX 75 WG)	Acute	Contact toxicity (LD_{50}) Oral toxicity (LD_{50})	>75 µg a.s./bee >108.2 µg a.s./bee
Apis mellifera	KAYAK 300 EC (A14325E)	Acute	Oral toxicity (LD_{50}) Contact toxicity (LD_{50})	>408 µg prep./bee (> 121 µg a.s./bee) >675 µg prep./bee (> 121 µg a.s./bee)
Apis mellifera	CHORUS 50 WG (A8637C)	Acute	Oral toxicity (LD_{50}) Contact toxicity (LD_{50})	>250 µg prep./bee (> 125 µg a.s./bee) >250 µg prep./bee (> 125 µg a.s./bee)
Apis mellifera	KAYAK 300 EC (A14325E)	Chronic	10 d-LDD_{50}	69.7 µg a.s./bee/day[1]
Apis mellifera	CHORUS 50 WG (A8637C)	Chronic	10 d-LDD_{50}	112.2 µg a.s./bee/day[1]
Apis mellifera	KAYAK 300 EC (A14325E)	Bee brood development[2]	8 d-LD_{50} 8 d-LD_{20} 8 d-LD_{10}	45.7 µg a.s./larva/developmental period 29.9 µg a.s./larva /developmental period 24.2 µg a.s./larva /developmental period
Apis mellifera	CHORUS 50 WG (A8637C)	Bee brood development[3]	8 d-LD_{50} 8 d-LD_{20} 8 d-LD_{10}	43.9 µg a.s./larva/developmental period 32.18 µg a.s./larva /developmental period 25.45 µg a.s./larva /developmental period

[1] Evaporation of the test solution was not measured.
[2] Large amount of uneaten food and smaller body size were observed
[3] Large amount of uneaten food and smaller body size were observed; endpoints are derived from data of day 7 (being worst case)

Potential for accumulative toxicity: not studied
Semi-field test (Cage and tunnel test) Not available

Field tests Not available

Risk assessment for – Cereals at 450 g a.s./ha [2 applications]*

Species	Substance	Risk quotient	HQ	Trigger
Apis mellifera	cyprodinil, KAYAK 300 EC	HQoral	<4.2 <4.1	50
Apis mellifera	cyprodinil, KAYAK 300 EC	HQcontact	<6 <2.4	50

* This risk assessment is based on SANCO, 2002; a risk assessment according to EFSA, 2013 was presented in the RAR

Risk assessment for – Apples at 375 g a.s./ha [3 applications]*

Species	Substance	Risk quotient	HQ	Trigger
Apis mellifera	cyprodinil, CHORUS 50 WG	HQoral	<3.~~3~~5 <3.0	50
Apis mellifera	cyprodinil, CHORUS 50 WG	HQcontact	<5 <3.0	50

* This risk assessment is based on SANCO, 2002; a risk assessment according to EFSA, 2013 was presented in the RAR

Effects on other arthropod species (Regulation (EU) N° 283/2013, Annex Part A, point 8.3.2 and Regulation (EU) N° 284/2013 Annex Part A, point 10.3.2)

Laboratory tests with standard sensitive species

Species	**Test Substance**	**End point**	**Toxicity**
Typhlodromus pyri	KAYAK 300 EC	Mortality, LR_{50} Reproduction, ER_{50}	1943 mL prep./ha -
Aphidius rhopalosiphi	KAYAK 300 EC	Mortality, LR_{50} Reproduction, ER_{50}	156 mL prep./ha -
Typhlodromus pyri	CHORUS 50 WG	Mortality, LR_{50} Reproduction, ER_{50}	>1800 g prep./ha -
Aphidius rhopalosiphi	CHORUS 50 WG	Mortality, LR_{50} Reproduction, ER_{50}	1423 g prep./ha -
Additional species			
Chrysoperla carnea	KAYAK 300 EC	Mortality, LR_{50} Reproduction, ER_{50}	2393 mL prep./ha >750 mL prep./ha

Species	**Test Substance**	**End point**	**Toxicity**
Coccinella septempunctata	KAYAK 300 EC	Mortality, LR_{50} Reproduction, ER_{50}	>3000 mL prep./ha >3000 mL prep./ha
Chrysoperla carnea	CHORUS 50 WG	Mortality, LR_{50} Reproduction, ER_{50}	658 g prep./ha >750 g prep./ha
Coccinella septempunctata	CHORUS 50 WG	Mortality, LR_{50}	<250 g prep./ha
Poecilus cupreus	CHORUS 50 WG	Mortality, LR_{50} Feeding, ER_{50}	>900 g prep./ha >900 g prep./ha
Poecilus cupreus	UNIX 75 WG (expressed as cyprodinil)	Mortality, LR_{50} Feeding, ER_{50}	>1500 g a.s./ha 1500 g a.s./ha

First tier risk assessment for – Cereals at 1500 mL prep./ha [2 applications]

Test substance	Species	Effect (LR_{50} mL/ha)	HQ in-field	HQ off-field[1]	Trigger
KAYAK 300 EC	*Typhlodromus pyri*	1943	1.3	0.03	2
	Aphidius rhopalosiphi	156	**16**	0.4	2

[1] Off-field rate estimated with the drift rate at 1 m.

First tier risk assessment for – Apples at 750 g prep./ha [3 applications]

Test substance	Species	Effect (LR_{50} g/ha)	HQ in-field	HQ off-field[1]	Trigger
CHORUS 50 WG	*Typhlodromus pyri*	>1800	0.96	0.23	2
	Aphidius rhopalosiphi	1420	1.2	0.29	2

[1] Off-field rate estimated with the drift rate at 3 m.

Extended laboratory tests, aged residue tests

Species	Life stage	Test substance, substrate	Time scale	Dose (g/ha or mL/ha)[1,2]	End point	% effect[3]	ER_{50}
Typhlodromus pyri	adults	KAYAK 300 EC, bean leaves	7d	23.33 93.67 375 750 1950 3000 mL prep./ha	Mortality	6% 8% 17% 15% 11% 8%	LR_{50} > 3000 mL prep./ha
					Reproduction	45% 22% 35% 43% 40% 68%	ER_{50} > 1950 mL prep./ha
Aphidius rhopalosiphi	adults	KAYAK 300 EC, barley seedlings	48h	23.33 93.67 375 750 1950 3000 mL prep./ha	Mortality	0% 0% 0% 0% 0% 7%	LR_{50} > 3000 mL prep./ha
					Reproduction	-17% -15% 4% 6% 1% 46%	ER_{50} > 3000 mL prep./ha
Chrysoperla carnea	larvae	KAYAK 300 EC, bean leaves	18d	23.33 93.67 375 750 1950	Mortality	0% 9.5% 0% 8.8% 50% 64.7%	LR_{50} = 2393 mL prep./ha

Species	Life stage	Test substance, substrate	Time scale	Dose (g/ha or mL/ha)[1,2]	End point	% effect[3]	ER_{50}
				3000 mL prep./ha	Reproduction	22% 29% 15% 27% - -	ER_{50} > 750 mL prep./ha
Coccinella septempunctata	larvae	KAYAK 300 EC, bean leaves	15d	23.33 93.67 375 750 1950 3000 mL prep./ha	Mortality	0% 5.7% 2.9% 22.9% 25.7% 24.9%	LR_{50} > 3000 mL prep./ha
					Reproduction	- - - -132% -5.4% -16%	ER_{50} > 3000 mL prep./ha
Typhlodromus pyri	adults	KAYAK 300 EC, pepper leaves	Aged-residue study	0 DAT [2] 2 x 1500 mL prep./ha	Mortality Reproduction	8% 16.1%	0 DAT: No effects on mortality and reproduction 14 DAT: No effects on mortality and reproduction
				14 DAT [2] 2 x 1500 mL prep./ha	Mortality Reproduction	10% 12.2%	
Chrysoperla carnea	larvae	KAYAK 300 EC, bean leaves	Aged-residue study	0 DAT [2] 2 x 1500 mL prep./ha	Mortality Reproduction	14.7% -7.7%	0 DAT: No effects on mortality and reproduction 7 DAT: No effects on mortality and reproduction
				7 DAT [2] 2 x 1500 mL prep./ha	Mortality Reproduction	5.9% 0 %	

Species	Life stage	Test substance, substrate	Time scale	Dose (g/ha or mL/ha)[1,2]	End point	% effect[3]	ER_{50}
Coccinella septempunctata	larvae	CHORUS 50 WG, bean leaves	Aged-residue study	300 450 600 750 900 g prep./ha	Mortality	10.6 12.8 30.8 28.2 53.8	LR_{50} = 888 g prep./ha
					Reproduction	-38% -23% -75% -32% 79%	ER_{50} > 750 g prep./ha
Coccinella septempunctata	larvae	CHORUS 50 WG, bean leaves	Aged-residue study	0 DAT [2] 3 x 750 g prep./ha	Mortality	92.3%	No effects > 50% on survival or reproduction at 3 x 750 g PP/ha after being exposed to 28 and 49 days aged residues.
				14 DAT [2] 3 x 750 g prep./ha	Mortality	58.8%	
				28 DAT [2] 3 x 750 g prep./ha	Mortality Reproduction	11.1% 24.2%	
				49 DAT [2] 3 x 750 g prep./ha	Mortality Reproduction	10.5% -65.4%	
Orius laevigatus	nymph	CHORUS 50 WG, bean leaves	Aged-residue study	0 DAT [2] 3 x 750 g prep./ha	Mortality	92.3%	No effects > 50% on survival or reproduction at 3 x 750 g PP/ha after being exposed to 28 and 42 days aged residues.
				14 DAT [2] 3 x 750 g prep./ha	Mortality	54.5%	
				28 DAT [2] 3 x 750 g prep./ha	Mortality Reproduction	9% 1.2%	
				42 DAT [2] 3 x 750 g prep./ha	Mortality Reproduction	-1.3% 0.2%	
Aphidius rhopalosiphi	adults	CHORUS 50 WG, bean leaves	Aged-residue study	0 DAT [2] 3 x 750 g prep./ha	Mortality Reproduction	5.1% 3.6%	0 DAT: No effects on mortality

Species	Life stage	Test substance, substrate	Time scale	Dose (g/ha or mL/ha)[1,2]	End point	% effect[3]	ER_{50}
				7 DAT [2] 3 x 750 g prep./ha	Mortality Reproduction	5.0% -8.8 %	and reproduction 7 DAT: No effects on mortality and reproduction

- : not assessed
[1] positive percentages indicate adverse effects
[2] DAT: Days After Treatment

Risk assessment for – Cereals at 1500 mL prep./ha [2 applications] based on extended lab test or aged residue tests

Test substance	Species	Endpoint (mL/ha)	In-field rate	Off-field rate[1]
Extended lab				
KAYAK 300 EC	*T. pyri*	LR_{50} > 3000 ER_{50} > 1950	**2550**	6.1 (2D)
KAYAK 300 EC	*A. rhopalosiphi*	LR_{50} > 3000 ER_{50} >3000	2550	61
KAYAK 300 EC	*C. carnea*	LR_{50} = 2393 ER_{50} > 750	**2550**	6.1
KAYAK 300 EC	*C. septempunctata*	LR_{50} > 3000 ER_{50} > 3000	2550	6.1
Aged residues				
KAYAK 300 EC	*T. pyri*	No effect >50% on reproduction at 2 x 1500 mL prep.ha at 0 and 14 DAT.	2550	6.1
KAYAK 300 EC	*C. carnea*	No effect >50% on reproduction at 2 x 1500 mL prep.ha at 0 and 7 DAT.	2550	6.1

[1] Off-field rate estimated with the drift rate at 1 m and considering 3D tests for *A. rhopalosiphi* or 2D tests for *T. pyri, C. carnea* and *C. septempunctata*.

Risk assessment for – Apples at 750 g prep./ha [3 applications] based on extended lab test or aged residue tests

Test substance	Species	Endpoint (g/ha)	In-field rate	Off-field rate[1]
Extended lab				

Test substance	Species	Endpoint (g/ha)	In-field rate	Off-field rate[1]
CHORUS 50 WG	*C. septempunctata*	LR_{50} = 888 ER_{50} > 750	**1725**	41.4
CHORUS 50 WG	*C. carnea*	LR_{50} = 658 ER_{50} > 750	**1725**	41.4
CHORUS 50 WG	*P. cupreus*	LR_{50} > 900 ER_{50} > 900	**1725**	41.4
Aged residues				
CHORUS 50 WG	*A. rhopalosiphi*	No effect >50% on reproduction at 3 x 750 g prep.ha at 0 and 7 DAT.	1725	41.4

[1] Off-field rate estimated with the drift rate at 3 m and considering 2D tests for *A. rhopalosiphi*, *P. cupreus, C. carnea* and *C. septempunctata*.

Semi-field tests

***A. rhopalosiphi*: Semi-field test on wheat with CHORUS 50 WG (Kleiner, 1997)** *Aphidius rhopalosiphi* were exposed to A8637C residues on wheat (*Triticum aestivum*) plants under semi-field conditions. 5% increase of parasitisation at 4 × 0.45 kg prep./ha (2-3 d interval) and 92% effect on parasitation at 2 × 3.0 kg/ha (7 day interval) were observed. ***C. septempunctata*: Semi-field test on bean plants with CHORUS 50 WG (Kleiner, 1999)** Second instar larvae of *Coccinella septempunctata* were exposed to treatments on broad bean plants in outdoor cages. There was 38.4% mortality at 4 × 0.09 kg/ha, 45.2% mortality at 4 × 0.45 kg/ha, 69.9% mortality at 2 × 0.6 kg/ha and 100% mortality at 2 × 3.0 kg/ha (7 day interval). No effect on fecundity for all tested scenarios (4 × 0.45, 4 × 0.09, 2 × 0.6 kg/ha, 7-8 day interval). ***Orius laevigatus*: Semi-field test on quince with CHORUS 50 WG (Kleiner, 1997)** *Orius laevigatus* were exposed under semi-field conditions to applications of A8637C on quince trees. There was 34.5% mortality at 4 × 0.45 kg/ha and 73.6% mortality at 2 × 3 kg/ha. Concerning reproduction, there was 27% reduction at 4 × 0.45 kg/ha and 61% reduction at 2 × 3 kg/ha (7 day interval). ***C. septempunctata*: Semi-field test on bean plants with UNIX 75 WG (Nienstedt, 1999)** Broad bean seedlings were treated with a single application of 750 g a.s./ha (1 kg prep./ha) and placed under a transparent PVC shelter in the field. 20 impartially selected ladybird beetle larvae were placed within the centre of each planted replicate tray. UNIX 75 WG had a statistically significant effect on survival with 30.7% mortality. Oviposition was increased in the UNIX® treatment and the hatching rate of larvae was similar to the control group. The total effect was calculated to be –26.2% (no reduction). ***C. septempunctata*: Semi-field test on bean plants with UNIX 75 WG (Grimm, 2000)** Broad bean plants were treated twice with 37.5 g a.s./ha (0.05 kg prep./ha) or 750 g a.s./ha (1 kg prep./ha) and placed in a greenhouse in the field. The test organisms were released to dried residue on the plants just after the second application of UNIX® (14 d interval). In addition, a 2nd and a 3rd test series was started 14 and 28 d after the 2nd application, in order to test the effect of aged residues of UNIX® on the ladybird beetle. UNIX® 75 WG applied twice at 0.05 and 1 kg prep./ha had no statistically significant effect on the survival (9.2% maximum) or reproduction (17% maximum) of the ladybird beetle exposed to dried residues immediately after the second application. Releases of larvae onto aged residues 14 and 28 d after the second application also detected no adverse effects on survival.
Field studies
***T. pyri*: Field test in apple orchard with CHORUS 50 WG (Aldershof, 2000a)** No statistically significant difference from control plot was found for either 4 × 0.45, 4 × 0.09 g/ha (9-10 d interval) ***T. pyri*: Field test in apple orchard with CHORUS 50 WG (Aldershof, 2000b)** No biologically significant difference from control plot was found for either 4 × 0.75 or 4 × 0.15 (5-8 d interval) **Effects of UNIX 75 WG on predatory mite populations in vines (Oberwalder,1998)** Vines were treated twice with 750 g a.s./ha (1 kg prep./ha). The number of mites on leaf samples was counted in order to determine the effects of UNIX 75 WG on mite populations. UNIX 75 WG had no significant effects on predatory mites populations at rates up to 2 x 750 g a.s./ha (1 kg prep./ha).
Additional specific test
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Effects on non-target soil meso- and macro fauna; effects on soil nitrogen transformation (Regulation (EU) N° 283/2013, Annex Part A, points 8.4, 8.5, and Regulation (EU) N° 284/2013 Annex Part A, points 10.4, 10.5)

Test organism	Test substance	Application method of test a.s./ OM	Time scale	End point	Toxicity
Earthworms					
Eisenia fetida	KAYAK 300 EC	Incorporation, 10% OM	Chronic	reproduction	EC20 = 22.71 mg form./kg soil (6.7 mg a.s./kg soil)
Eisenia fetida	Metabolite CGA249287	Incorporation, 10% OM	Chronic	reproduction	NOEC = 1.13 mg /kg d.w. soil.
Eisenia fetida	Metabolite CGA275535	Incorporation, 10% OM	Chronic	reproduction	EC_{10} = 385 mg /kg d.w. soil.
Eisenia fetida	Metabolite CGA321915	Incorporation, 10% OM	Chronic	Growth, reproduction, behaviour	NOEC = 1000 mg /kg d.w. soil.
Other soil macroorganisms					
Folsomia candida	KAYAK 300 EC	Incorporation, 5% OM	Chronic	Reproduction	NOEC = 29.4 mg prep./kg (8.67 mg a.s./kg)
Folsomia candida	CHORUS 50 WG	Incorporation, 5% OM	Chronic	Reproduction	NOEC = 58.3 mg prep./kg d.w. soil. (29.2 mg a.s./kg)
Folsomia candida	Metabolite CGA249287	Incorporation, 5% OM	Chronic	Reproduction	EC_{10} = 7.9 mg/kg d.w. soil.
Folsomia candida	Metabolite CGA275535	Incorporation, 5% OM	Chronic	Reproduction	NOEC = 171.5 mg/kg d.w. soil.
Folsomia candida	Metabolite CGA321915	Incorporation, 5% OM	Chronic	Mortality, growth, reproduction, behaviour	NOEC = 1000 mg/kg d.w. soil.
Hypoaspis aculeifer	KAYAK 300 EC	Incorporation, 5% OM	Chronic	Mortality, growth, reproduction, behaviour	NOEC = 1000 mg prep./kg d.w. soil. (295 mg a.s./kg)
Hypoaspis aculeifer	CHORUS 50 WG	Incorporation, 5% OM	Chronic	Reproduction	NOEC = 555.6 mg prep./kg d.w. soil. (277.8 mg a.s./kg)

Test organism	Test substance	Application method of test a.s./ OM	Time scale	End point	Toxicity
Hypoaspis aculeifer	Metabolite CGA249287	Incorporation, 5% OM	Chronic	Reproduction	EC_{10} = 70.5 mg/kg d.w. soil.
Hypoaspis aculeifer	Metabolite CGA275535	Incorporation, 5% OM	Chronic	Reproduction	NOEC = 171.5 mg/kg d.w. soil.
Hypoaspis aculeifer	Metabolite CGA321915	Incorporation, 5% OM	Chronic	Mortality, growth, reproduction, behaviour	NOEC = 1000 mg/kg d.w. soil.

Higher tier testing (e.g. modelling or field studies) No data available.

Nitrogen transformation	KAYAK 300 EC	No effect >25% at day 28 at 20.33 mg prep./kg d.w.soil
	CHORUS 50 WG	No effect >25% at day 28 at 9.96 mg prep./kg d.w.soil
	Metabolite CGA249287	No effect >25% at day 28 at 3.33 mg/kg d.w.soil
	Metabolite CGA275535	No effect >25% at day 57 at 2.3 mg/kg d.w.soil
	Metabolite CGA321915	No effect >25% at day 28 at 5.1 mg/kg d.w.soil

Toxicity/exposure ratios for soil organisms

Cereals at 450 g a.s./ha [2 applications]

Test organism	Test substance	Time scale	Soil PEC	TER	Trigger
Earthworms					
Eisenia fetida	Metabolite CGA249287	Chronic	0.043 [1]	26	5
Eisenia fetida	Metabolite CGA275535	Chronic	0.027	7148 [2]	5
Eisenia fetida	Metabolite CGA321915	Chronic	0.018 [1]	55 555	5
Other soil macroorganisms					
Folsomia candida	a.s. (tested as KAYAK 300 EC)	Chronic	0.279 [1]	15.6 [2]	5
Folsomia candida	KAYAK 300 EC	Chronic	0.441	33.3 [2]	5
Folsomia candida	Metabolite CGA249287	Chronic	0.043 [1]	184	5

Test organism	Test substance	Time scale	Soil PEC	TER	Trigger
Folsomia candida	Metabolite CGA275535	Chronic	0.027	3176 [2]	5
Folsomia candida	Metabolite CGA321915	Chronic	0.018 [1]	27 778	5
Hypoaspis aculeifer	a.s. (tested as KAYAK 300 EC)	Chronic	0.279 [1]	529[2]	5
Hypoaspis aculeifer	KAYAK 300 EC	Chronic	0.441	1134[2]	5
Hypoaspis aculeifer	Metabolite CGA249287	Chronic	0.043 [1]	1640	5
Hypoaspis aculeifer	Metabolite CGA275535	Chronic	0.027	3176 [2]	5
Hypoaspis aculeifer	Metabolite CGA321915	Chronic	0.018 [1]	27 778	5

[1]PECaccumulation
[2]Endpoint corrected by a factor of 2 (log Pow >2)

Apples at 375 g a.s./ha [3 applications]

Test organism	Test substance	Time scale	Soil PEC	TER	Trigger
Earthworms					
Eisenia fetida	Metabolite CGA249287	Chronic	0.236 [1]	**4.8** [3]	5
Eisenia fetida	Metabolite CGA275535	Chronic	0.022	8772 [2]	5
Eisenia fetida	Metabolite CGA321915	Chronic	0.100 [1]	10 00	5
Other soil macroorganisms					
Folsomia candida	a.s. (tested as CHORUS 50 WG)	Chronic	1.012[1]	14.4 [2]	5
Folsomia candida	CHORUS 50 WG	Chronic	0.4	73 [2] ~~45~~	5
Folsomia candida	Metabolite CGA249287	Chronic	0.236 [1]	33	5
Folsomia candida	Metabolite CGA275535	Chronic	0.022	3898 [2]	5
Folsomia candida	Metabolite CGA321915	Chronic	0.100 [1]	10 000	5
Hypoaspis aculeifer	a.s. (tested as CHORUS 50 WG)	Chronic	1.012[1]	113 [2]	5
Hypoaspis aculeifer	CHORUS 50 WG	Chronic	0.4	695 [2]	5

Test organism	Test substance	Time scale	Soil PEC	TER	Trigger
Hypoaspis aculeifer	Metabolite CGA249287	Chronic	0.236 [1]	299	5
Hypoaspis aculeifer	Metabolite CGA275535	Chronic	0.022	3898 [2]	5
Hypoaspis aculeifer	Metabolite CGA321915	Chronic	0.100 [1]	10 000	5

[1]PECaccumulation
[2]NOEC corrected by a factor of 2 (log Pow >2 and 10% OM)
[3] Based on the NOEC value corresponding to the highest tested concentration in the test

Effects on terrestrial non target higher plants (Regulation (EU) N° 283/2013, Annex Part A, point 8.6 and Regulation (EU) N° 284/2013 Annex Part A, point 10.6)

Laboratory dose response tests

Species	Test substance	ER_{50} (g/ha) vegetative vigour	ER_{50} (g/ha) emergence
Brassica napus *Avena fatua* *Beta vulgaris* *Cucumis sativus* *Glycine max* *Allium cepa*	KAYAK 300 EC	>450 g a.s./ha	>450 g a.s./ha
Brassica napus *Avena fatua* *Beta vulgaris* *Zea mays* *Glycine max* *Allium cepa*	CHORUS 50 WG	>450 g prep./ha	>450 g prep./ha

Effects on biological methods for sewage treatment (Regulation (EU) N° 283/2013, Annex Part A, point 8.8)

Test substance	Test type/organism	end point
a.s.	Activated sludge	EC_{50} >100 mg/L
Metabolite CGA263208	Activated sludge	EC_{50} = 48 mg/L
Metabolite CA1139A	Activated sludge	EC_{50} = 64.2 mg/L

Monitoring data (Regulation (EU) N° 283/2013, Annex Part A, point 8.9 and Regulation (EU) N° 284/2013, Annex Part A, point 10.8)

No data were provided

Definition of the residue for monitoring (Regulation (EU) N° 283/2013, Annex Part A, point 7.4.2) Ecotoxicologically relevant compounds

Compartment	
soil	cyprodinil

water	cyprodinil
sediment	cyprodinil
groundwater	cyprodinil

Classification and labelling with regard to ecotoxicological data (Regulation (EU) N° 283/2013, Annex Part A, Section 10)

Substance	Cyprodinil
Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended][3]:	H400 - Very toxic to aquatic life. H410 - Very toxic to aquatic life with long lasting effects.
According to the peer review criteria for harmonised classification according to Regulation (EC) No 1272/2008 may be met for:	Acute M factor = 100 (based on the EC_{50} value of 8.05 µg a.s./L for *M. bahia*). Chronic M factor = 10 (based on the EC_{10} value of 8.16 µg a.s./L for *D. magna*)

[3] Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.