REGISTRATION REPORT

Part B

Section 10

Assessment of the relevance of metabolites in groundwater

Detailed summary of the risk assessment

Product code: ADM.03500.F.2.B

(alternative codes: ADM.3500.F.2.B; MCW-2075)

Product name(s): see part A

Chemical active substance(s):

Prothioconazole 250 g/L

Central zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT

(authorisation)

Applicant: Country organisation/representative as specified in Part A

Submission date: June 2021

MS Finalisation date: November 2022 (initial Core Assessment)

March 2023 (final Core Assessment)

Version history

When	What
2021/06	Version 1 Applicant
November 2022	Initial ZRMS assessment The report in the dRR format has been prepared by the Applicant, therefore all comments, additional evaluations and conclusions of the zRMS are presented in grey commenting boxes. Minor changes are introduced directly in the text and highlighted in grey. Not agreed or not relevant information are ~~struck through and shaded for transparency~~.
March 2023	Final report (Core Assessment updated following the commenting period) No additional information or assessments after the commenting period.

DATA PROTECTION CLAIM

In order to present a dossier fully compliant with today's requirements (Reg. 284/2013), studies have been performed on ADM.03500.F.2.B. Under Article 59, Regulation 1107/2009/EC. On behalf of the Sponsor Company the applicant claims data protection for the studies conducted with ADM.03500.F.2.B. The data protection status and corresponding justification as valid for the respective country will be confirmed in the respective PART A.

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Reviewer summary:

This part of dossier has been submitted to support registration of the plant protection product ADM.03500.F.2.B (an a EC formulation containing 250 g/L prothioconazole) according art. 33 of 1107/2009. Document refers data related to the forming of metabolites in the environment (see dRR B8).
dRR Part B10 has been reviewed for the purposes of ongoing registration and also checked its compliance with the current guidelines. Information has been considered as sufficient and appropriate for concluding.

10 Relevance of metabolites in groundwater

10.1 General information

The relevance assessment of the metabolites predicted in groundwater at concentrations above the drinking water limit of 0.1 µg/L was performed in accordance with the recommendations of SANCO/221/2000, rev. 10, 2003. According to the definition given in the guideline, a relevant metabolite in groundwater is a metabolite for which there is reason to assume that it has comparable intrinsic properties as the active substance in terms of its biological target activity, or that it has certain toxicological properties that are considered severe and unacceptable. Relevant metabolites are subjected to the limit of 0.1 µg/L laid down by the Drinking Water Directive (Council Directive 98/83/EC).

The decision on whether a metabolite leaches into groundwater at levels at or above 0.1 µg/L is done usually by Tier-1 FOCUS groundwater calculations. However, refinement by Higher-tier steps is possible and in SANCO/221/2000 rev. 10 under "step 2: Quantification of potential groundwater contamination" it is said explicitly that:

"*As far as valid and representative data are available for existing active substances, also monitoring data can be used to predict environmental concentrations of metabolites in groundwater. Monitoring data from regions with well-documented use of active substance in question may provide a useful additional tool to supplement model calculations and lysimeter experiments to improve the accuracy and validity of estimates of potential groundwater contamination*."

In general, according to the criteria set forth in SANCO/221/2000, rev. 10, 2003 metabolites/degradation products...

a) ...which account for more than 10 % of the amount of active substance added in soil at any time during the studies, or

b) ...which account for more than 5 % of the amount of active substance added in soil in at least two sequential measurements during the studies, or

c) ...for which at the end of soil degradation studies the maximum of formation is not yet reached...

...are potentially of concern requiring an assessment according to SANCO/221/2000 rev. 10.

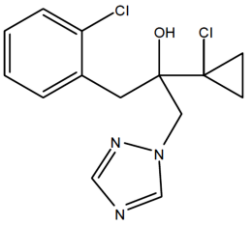
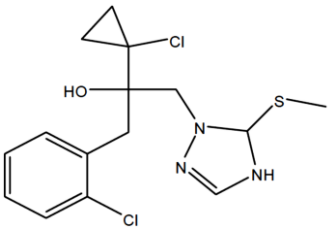
According to the above listed criteria, the prothioconazole metabolites prothioconazole-desthio (JAU-Desthio, 15.1 - 46.5 % AR) and prothioconazole-S-methyl (JAU-S-Methyl, 1.5 - 14.6 % AR)[1] need to be assessed in this document according to the procedure described in SANCO/221/2000 rev. 10. This procedure involves the exclusion of degradation products of no concern (step 1), the quantification of potential groundwater contamination (step 2), a hazard assessment for the identification of relevant metabolites (step 3) including screening for biological activity (stage 1), genotoxicity (stage 2) and toxic potential (stage 3), an exposure assessment (step 4) and for non-relevant metabolites exceeding the overall threshold of concern concentration, a refined risk assessment (step 5).

General information on these metabolites are provided below. The impact of the relevance assessment on

[1] Results of soil degradation studies according to EFSA Scientific Report (2007) 106, 1-98, Conclusion on the peer review of prothioconazole

whether GAP uses lead to acceptable risk is presented in the summary of the cGAP evaluation under data point 8.8 (*Predicted environmental concentrations in groundwater*) of the dRR Part B, Section 8 (*Environmental fate and behaviour*) for prothioconazole and its metabolites.

Table 10.1-1: General information on the metabolites

Name of active substance	Metabolite name and code	Molar mass [g/mol]	Structural/molecular formula
Prothioconazole	prothioconazole-desthio (JAU-Desthio)	312.2	
	prothioconazole-S-methyl (JAU-S-Methyl)	358.3	

10.2 Relevance assessment of prothioconazole-desthio and prothioconazole-S-methyl

Summary

The prothioconazole metabolites prothioconazole-desthio and prothioconazole-S-methyl are classified as non-relevant metabolites and thus, have not been subjected to a relevance assessment. Hence, they do not pose an unacceptable risk to groundwater. A summary of the assessment steps according to SANCO/221/2000 rev. 10 is presented in the tables below.

Table 10.2-1: Summary of the relevance assessment for metabolite prothioconazole-desthio

	Assessment step	Result of assessment	
	STEP 1	Metabolite of no concern?	no (cannot be excluded)
Quantification of groundwater contamina-	STEP 2	Max PEC_{gw}	< 0.1 µg/L
		Based on	FOCUS PEARL 4.4.4 (80^{th} Percentile PEC_{gw} at 1 m soil depth)

Table 10.2-2: Summary of the relevance assessment for metabolite prothioconazole-S-methyl

	Assessment step	**Result of assessment**	
	STEP 1	Metabolite of no concern?	no (cannot be excluded)
Quantification of groundwater contamination	STEP 2	Max PEC_{gw}	< 0.1 µg/L
		Based on	FOCUS PEARL 4.4.4 (80th Percentile PEC_{gw} at 1 m soil depth)

10.2.1 STEP 1: Exclusion of degradation products of no concern

The above mentioned metabolites/degradation products potentially of concern do not meet the criteria for products of no concern defined in Step 1 of the guideline, since they are not:

- CO_2 or inorganic compounds, not containing a heavy metal, *or*
- organic compounds of aliphatic structure, with a chain length of 4 or less, which consist only of C, H, N or O atoms and which have no "alerting structures" such as epoxide, nitrosamine, nitrile or other functional groups of known toxicological concern, *or*
- substances, which are known to be of no toxicological or ecotoxicological concern, and which are naturally occurring at much higher concentrations in the respective compartment.

In conclusion, exposure of groundwater with these compounds was estimated in Step 2.

10.2.2 STEP 2: Quantification of potential groundwater contamination

For prothioconazole and its metabolites PEC_{gw} values were all < 0.001 µg/l in all relevant scenarios using current model versions FOCUS PELMO 5.5.3 and/or FOCUS PEARL 4.4.4. In accordance with the working document of the central zone (2018), only FOCUS PEARL 4.4.4. PEC_{gw} values have been presented in the core assessment of the central zone for formulation ADM.03500.F.2.B (dRR Part B, Section 8).

The exposure assessment in groundwater was based on various application patterns (see Table 8.8-1 of the dRR Part B, Section 8) derived from GAP information. Briefly, the critical GAP uses of ADM.03500.F.2.B in spring and winter cereals (1 × 0.8 L prod./ha, BBCH 30) and spring and winter oilseed rape (1 × 0.7 L prod./ha, BBCH 50) have been considered. Based on the application timing of these critical GAP uses 80 % crop interception were considered in all simulations.

Please note, that maximum PEC_{gw} represent the worst-case of application for a specific GAP use since the maximum intended rates (corrected for crop interception) were set to the beginning of the intended application timing, where crop interception is lowest.

Tier-1 PEC_{gw} values for relevant prothioconazole:

Table 10.2-3: Tier-1 PEC_{gw} for prothioconazole-desthio, prothioconazole-S-methyl on cereals (BBCH 30) with FOCUS PEARL 4.4.4 (1 × 200 g a.s./ha)

Metabolite	**Model/ Scenario***	**80th Percentile PEC_{gw} at 1 m soil depth (µg/L)**	**Further assessment required**
Prothioconazole-desthio	FOCUS PEARL 4.4.4	< 0.001	No
Prothioconazole-S-methyl	FOCUS PEARL 4.4.4	< 0.001	No

* maximum PEC_{gw}

Table 10.2-4: Tier-1 PEC_{gw} for prothioconazole-desthio, prothioconazole-S-methyl on oilseed rape (BBCH 50) with FOCUS PEARL 4.4.4 (1 × 175 g a.s./ha)

Metabolite	**Model/ Scenario***	**80th Percentile PEC_{gw} at 1 m soil depth (µg/L)**	**Further assessment required**
Prothioconazole-desthio	FOCUS PEARL 4.4.4	< 0.001	No

Prothioconazole-S-methyl	FOCUS PEARL 4.4.4	< 0.001	No

* maximum PEC_{gw}

In conclusion, according to the criteria set forth in SANCO/221/2000, rev. 10, 2003, prothioconazole-desthio, prothioconazole-S-methyl with maximum PECgw values < 0.0001 µg/L are classified as non-relevant metabolites which do not pose an unacceptable risk to groundwater and therefore, a further relevance assessment according to Steps 3 to 5 of SANCO/221/2000, rev. 10, 2003, is not necessary. In conclusion, the GAP uses of formulation ADM.03500.F.2.B in spring and winter cereals (1 × 0.8 L prod./ha, BBCH 30) and spring and winter oilseed rape (1 × 0.7 L prod./ha, BBCH 50) intended in the central zone do not pose an unacceptable risk to the groundwater.

10.2.3 STEP 3: Hazard assessment – identification of relevant metabolites

Not required.

10.2.3.1 STEP 3, Stage 1: screening for biological activity

Nor required.

10.2.3.2 STEP 3, Stage 2: screening for genotoxicity

Not required.

10.2.3.3 STEP 3, Stage 3: screening for toxicity

Not required.

10.2.4 STEP 4: Exposure assessment – threshold of concern approach

Not required.

10.2.5 STEP 5: Refined risk assessment

Not required.

Appendix 1 Lists of data considered in support of the evaluation

List of data submitted by the applicant and relied on

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

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

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

List of data submitted by the applicant and not relied on

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

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

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

Appendix 2 Additional information

None.