European Commission

Draft Renewal Assessment Report prepared according to the Commission Regulation (EC) N° 1107/2009

Metconazole

Volume 3 – B.5 (PPP) – BAS 555 01 F

Rapporteur Member State : Belgium
Co-Rapporteur Member State : United Kingdom

Version History

When	What
January 2004	Initial DAR Draft Assessment Report (DAR) – prepared in the context of the application for the first inclusion of the a.s. in Annex I to Council Directive 91/414/EEC. Various addenda were issued in August 2004, January and September 2005.
2018-01-31	Draft Renewal Assessment Report (DRAR) – prepared in the context of the application for renewal of approval of the a.s. according to Reg (EU) No EU 844/2012. *Note: The RAR is a stand-alone document containing the evaluations already displayed in the original DAR, as well as the new assessments. The revision of the initial DAR has been done in accordance with SANCO/10180/2013 rev.1 (March 2013), with changes to the original text – resulting from assessment of new studies (or reconsideration of old studies or studies that were not yet previously peer-reviewed) – being highlighted by means of yellow shading. However, for the renewal of the a.s., a new formulation is proposed as representative formulation. Data submitted on the formulation 'BAS 555 01 F' were therefore not evaluated in the initial DAR and are presented and evaluated in this document.*

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B.5. METHODS OF ANALYSIS

B.5.1. METHODS USED FOR THE GENERATION OF PRE-AUTHORISATION DATA

B.5.1.1. Analysis of the plant protection product

B.5.1.1.1. Methods for the analysis of the active substance content

Studies No. 1 and 2

Previous evaluation:	*No, submitted for the purpose of renewal*

Report:	**CP 5.1.1/001** Weatherhead P., 2000a Method validation of RLA 12495.00 HPLC method for the determination of metconazole SL formulations MK-220-007
Guidelines:	None
GLP:	No

Report:	**CP 5.1.1/002** Fries J., 2004a Supplement to the method validation of RLA 12495.00 HPLC method for the determination of metconazole SL formulations (technical report No. RLG 4572) 2003/1021955
Guidelines:	OECD Principles of Good Laboratory Practice (Paris 1999), GLP Principles of the German Chemikaliengesetz (Chemicals Act)
GLP:	yes (certified by Landesamt fuer Umweltschutz und Gewerbeaufsicht, Mainz, Germany)

Principle of the methods:
The metconazole content in formulations, such as BAS 555 01 F, is analyzed applying a reverse phase HPLC method with UV detection and external calibration.

Method parameters

Column	Stainless steel 250 x 4.6 mm (i.d.) with Zorbax SB-C18, or equivalent
Column temperature	ambient
Diluting Solvent	Acetonitrile:Water 50:50 v/v
Mobile Phase	Acetonitrile/0.033M phosphoric acid (50/50) (v/v)
Column flow	0.75 mL/min
Injection volume	10 µL (loop sampler)
Detection	UV 220 nm
Analysis time	30 min
RT	Reg. No. 4079654 (trans-metconazole) ~ 22 min Reg. No. 4079468 (cis-metconazole) ~ 24 min

Findings

Identity/Specificity
The peak identities have been confirmed by comparison to known standards. The chromatographic peak for metconazole was positively identified by retention time. Specificity was verified by comparing the particular retention times of the reference substance with these of the test substance. There were no indications of interferences due to other components in the formulation. The blank formulations were also checked.

Linearity
The linear range for the determination of metconazole was determined by injection of ten individually weighted solutions at five different concentration levels containing metconazole in the range of 50 mg/L to 150 mg/L. These concentrations correspond to 50 % to 150 % of the method target concentration. Linearity is given in the measured range. The results do not show any significant deviations from linearity, i.e. the correlation coefficients are > 0.999.

y-axis intercept (b) :	-22285
slope (m):	27440
correlation factor:	0.9999
concentration range:	50 - 150 µg/mL

Precision
Precision (repeatability) is calculated as the relative standard deviation of six individual sample weights of the test item. Each sample solution was analyzed by two analysts on each of two days, resulting in a total of 24 sample analyses. The analyses gave a mean assay of 8.48 % w/w for metconazole. The overall percent relative standard deviations was 2.02 %.

The acceptability of the % RSD values (relative standard deviation) for precision was proved by the Horwitz equation, an exponential relationship between the inter-laboratory relative standard deviation (RSD) and concentration C (expressed as decimal fraction):

$$\%RSD_R = 2^{(1-0.5\log C)}$$

which is modified for the estimation of the repeatability (RSD_r intra-laboratory) to:

$$\%RSD_r = \%\ RSD_R \times 0.67$$

Horwitz results for the repeatability test with BAS 555 01 F:

Item	**nominal conc. [%]**	**corresp. conc. `C`**	**%RSD_R Horwitz (Inter Lab. RSD)**	**%RSD_r Horwitz (Intra Lab. RSD)**	**%RSD analyzed**
BAS 555 01 F	8.57	0.0857	2.895	1.94	1.96

Taking into account the fact that the modified Horwitz value for the intra-laboratory RSD is more considered to be a guideline value than a sharp limit the analyzed RSD is in accordance with the modified Horwitz value.

Accuracy
Accuracy (recovery) was determined based on a blank formulation spiked with known amounts of metconazole at 50 %, 100 % and 150 % of the target concentration. Six individual sample weights of each concentration were measured. Mean recoveries of metconazole from a spiked blank formulation are 99.5, 99.8 and 100.2 % at 50, 100 and 150 % of the theoretical target concentration with an overall mean recovery over the range 50 – 150 % = 99.8 % and an overall % RSD = 1.01.

Active Ingredient	**cont. of target conc.**	**samples**	**range of recovery [%]**	**mean value [%]**	**%RSD**
Reg.no. 4056343 (metconazole)	50 %	6	97.4 - 100.9	99.5	1.23
	100 %	6	98.7 - 100.6	99.8	0.74
	150 %	6	98.5 - 101.6	100.2	1.07
			overall	99.8	1.01

RMS conclusion (renewal):
Analytical method RLA 12495.00 is fully validated according to SANCO/3030/99 rev.4. The results demonstrate that this method is considered suitable to determine the content of the active ingredient metconazole in formulations, such as BAS 555 01 F.

B.5.1.1.2. Methods for determination of relevant impurities identified in the technical material or which may be formed during manufacture of the plant protection product or from degradation of the plant protection product during storage

Two impurities are relevant in metconazole technical material but considered to be not of concern at the specified levels.
A validated method to determine these impurities with an appropriate LOQ in the plant protection product should therefore be provided.

B.5.1.1.3. Methods for the determination of relevant co-formulants or components of co-formulants, where required by the national competent authorities

Currently not required by EU legislation.

B.5.1.2. Methods for the determination of residues

B.5.1.2.1. Analytical methods for the determination of metconazole residues in soil, water, sediment, air used in support of the environmental fate studies

Please refer to Vol.3 B.5 – CA.

B.5.1.2.2. Analytical methods for the determination of metconazole residues in soil, water used in support of the efficacy studies

Please refer to Vol.3 B.5 – CA.

B.5.1.2.3. Analytical methods for the determination of metconazole residues in feed, body fluids and tissues, air used in support of toxicity studies

Please refer to Vol.3 B.5 – CA.

B.5.1.2.4. Analytical methods for the determination of metconazole residues in body fluids, air used in support of operator, worker, resident and bystander exposure studies

Please refer to Vol.3 B.5 – CA.

B.5.1.2.5. Analytical methods for the determination of metconazole residues in plants, plant products, processed food commodities, food of plant and animal origin, feed used in support of residues studies

Please refer to Vol.3 B.5 – CA.

B.5.1.2.6. Analytical methods for the determination of metconazole residues in soil, water, sediment, feed used in support of ecotoxicity studies

Please refer to Vol.3 B.5 – CA.

B.5.1.2.7. Analytical methods for the determination of metconazole residues in water, buffer solutions, organic solvents used in support of physical and chemical tests

Please refer to Vol.3 B.5 – CA.

B.5.2. METHODS FOR POST-APPROVAL CONTROL AND MONITORING PURPOSES

For determination of the active substance in the formulation, please refer to B.5.1.1 of this volume.

For determination of residues of alpha-cypermehtrin in plant matrices, animal matrices, environmental matrices, please refer to Vol.3 B.5 – CA.

B.5.3. REFERENCES RELIED ON

Data Point according to 284/2013 [data point as initially referenced by notifier] (reference in Vol. 3 CP-B.5)	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner	Previous evaluation
KCP 5.1.1(a)/001 [KCP 5.1.1/1] (B.5.1.1.1)	Weatherhead P.	2000 a	Method validation of RLA 12495.00 HPLC method for the determination of Metconazole SL formulations MK-220-007 BASF plc, Gosport Hampshire PO13 0AU, United Kingdom no Unpublished	No	No	Not applicable	BASF	Submitted for purpose of renewal
KCP 5.1.1(a)/002 [KCP 5.1.1/2] (B.5.1.1.1)	Fries J.	2004 a	Supplement to the method validation of RLA 12495.00 HPLC method for the determination of Metconazole SL formulations (technical report No. RLG 4572) 2003/1021955 BASF AG Agrarzentrum Limburgerhof, Limburgerhof, Germany Fed.Rep. yes Unpublished	No	Yes	New data for AIR3 renewal	BASF	Submitted for purpose of renewal