

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference BCS183029 WO01	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2019/059089	International filing date (<i>day/month/year</i>) 10 April 2019 (10-04-2019)	(Earliest) Priority Date (<i>day/month/year</i>) 12 April 2018 (12-04-2018)
Applicant BAYER AKTIENGESELLSCHAFT		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 9 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6**bis**(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☒ **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- ☐ the text is approved as submitted by the applicant
☒ the text has been established by this Authority to read as follows:

N-(CYCLOPROPYLMETHYL)-5-(METHYLSULFONYL)-N-{1-[1-(PYRIMIDIN-2-YL)-1H-1,2,4-TRIAZOL-5-YL]ETHYL}BENZAMIDE DERIVATIVES AND THE CORRESPONDING PYRIDINE-CARBOXAMIDE DERIVATIVES AS PESTICIDES

5. With regard to the **abstract**,

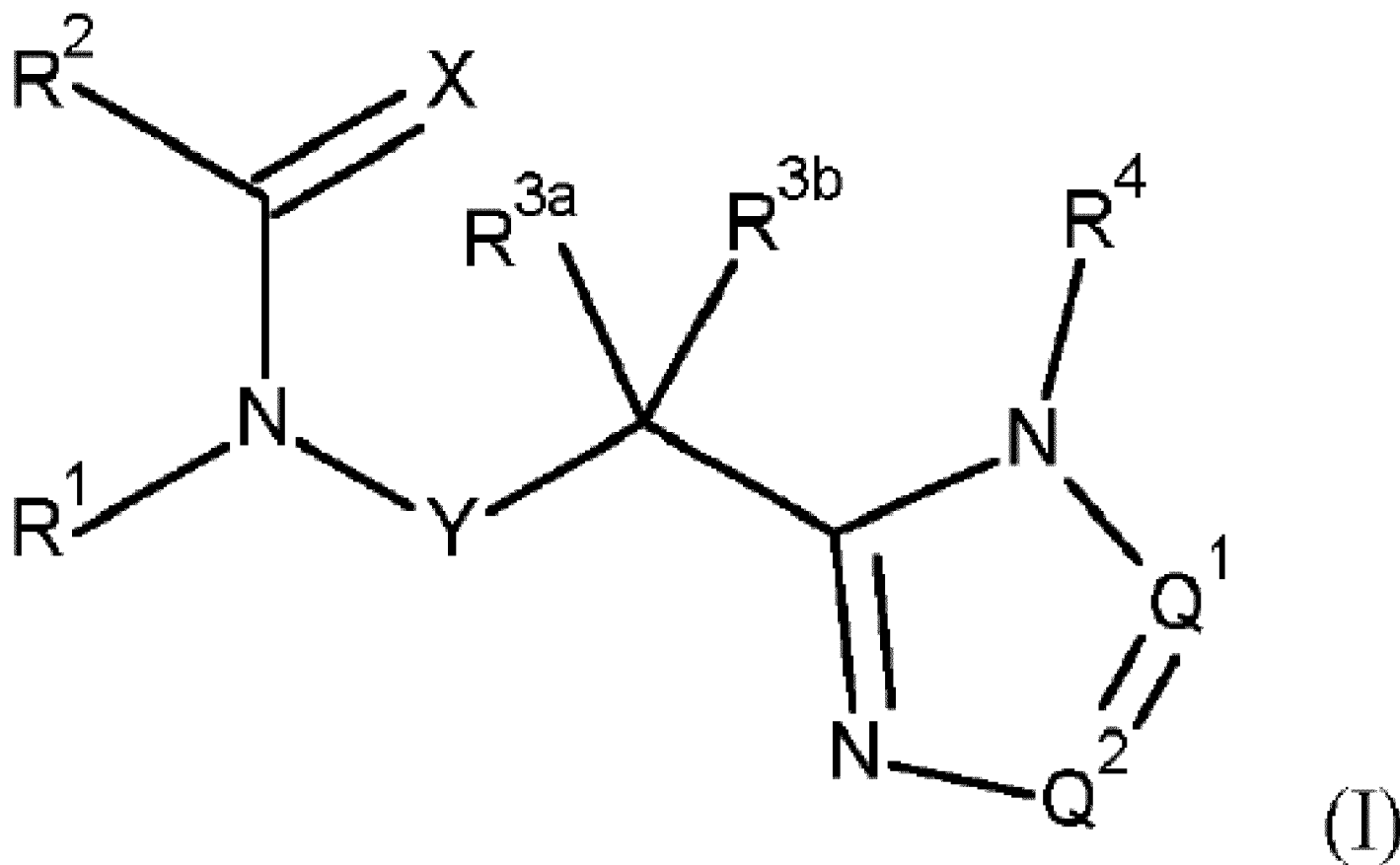
- ☐ the text is approved as submitted by the applicant
☒ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. _____
☐ as suggested by the applicant
☐ as selected by this Authority, because the applicant failed to suggest a figure
☐ as selected by this Authority, because this figure better characterizes the invention
- b. ☐ none of the figures is to be published with the abstract

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The present invention relates to N-(cyclopropylmethyl)-5-(methylsulfonyl)-N-{1-[1-(pyrimidin-2-yl)-1H-1,2,4-triazol-5-yl]ethyl}benzamide derivatives and the corresponding pyridine-carboxamide derivatives as well as related compounds of the general formula (I), to formulations and compositions comprising such compounds and to their use in the control of animal pests including arthropods and insects in plant protection and to such compounds for use in controlling ectoparasites on animals.



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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9, 14-24(all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

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A. CLASSIFICATION OF SUBJECT MATTER				
INV.	C07D403/04	C07D401/14	C07D401/04	C07D403/14
	C07D413/14	C07D417/04	C07D417/14	C07C317/14
	C07C321/28	A01N43/653	A01N43/713	A01N47/04
				A61K31/4196
According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED				
Minimum documentation searched (classification system followed by classification symbols) C07D C07C A01N A61K A61P				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data, CHEM ABS Data				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages			Relevant to claim No.
A	WO 2017/192385 A1 (ELANCO TIERGESUNDHEIT AG [CH]; LILLY CO ELI [US]) 9 November 2017 (2017-11-09) cited in the application page 1, line 4 - line 6 page 33 - page 67; examples 1-75 page 70 - page 75 claims 1, 15 -----			1-9, 14-24
X	WO 2010/021919 A1 (MERCK SHARP & DOHME [US]) 25 February 2010 (2010-02-25) page 43; scheme 4; intermediate 15 page 54; preparation of intermediate 13; step A; line 8; N-[1-(aminocarbonyl)cyclopentyl]-2-chloro-benzamide ----- -/--			9
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.				
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family				
Date of the actual completion of the international search 9 May 2019			Date of mailing of the international search report 16/07/2019	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016			Authorized officer Cortés Suárez, José	

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 598 343 A1 (BOEHRINGER INGELHEIM INT [DE]) 23 November 2005 (2005-11-23) page 46; line 5; 12-amino-N-(2-amino-2-oxoethyl)-6-fluoro-benzamide	9
X	----- JP 2001 172258 A (SUMITOMO PHARMA) 26 June 2001 (2001-06-26) page 9; [0030]; example 3; step 1); intermediate; N-(2-amino-1,1-dimethyl-2-oxoethyl)-2,4-di fluoro-benzamide	9
X	----- WO 00/48992 A1 (ASTRAZENECA AB [SE]) 24 August 2000 (2000-08-24) page 24 to page 27; 2-(2,4-dichloro-benzamide)-acetemide and 2-(2,6-dichloro-benzamide)-acetamide derivatives as starting materials of examples 1 to 15, 17, 18 and 20 page 28 to page 32; 2-(2,4-dichloro-benzamide)-acetemide and 2-(2,6-dichloro-benzamide)-acetamide derivatives of methods A to F; e.g. compounds of page 30, lines 12 to 24	9
X	----- WO 92/05163 A1 (PFIZER [US]) 2 April 1992 (1992-04-02) page 13; example 1; 2-(2,4-dichloro-benzamide)-acetemide and 2-(2,6-dichloro-benzamide)-acetamide derivatives	9
X	----- WO 2015/035003 A1 (US HEALTH [US]) 12 March 2015 (2015-03-12) claims 1-4	9
X	----- WO 2011/156674 A2 (US HEALTH [US]) 15 December 2011 (2011-12-15) example 3 compounds 7a-7f page 33; compound 8 claims 1, 34-36	9
X	----- WO 2012/080376 A1 (SYNGENTA PARTICIPATIONS AG [CH]) 21 June 2012 (2012-06-21) page 78, line 27 - page 79, line 32 page 84, line 3 claims 1, 11	24
A	----- -/--	1-9, 14-23

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 2018/172471 A1 (SYNGENTA PARTICIPATIONS AG [CH]) 27 September 2018 (2018-09-27)	9,24
A,P	abstract page 12, line 33 - page 13, line 5 compounds (Int-I) page 25, line 33 - page 26, line 7 page 16 - page 19; table P page 80, paragraph 4 - paragraph 5 claim 13 -----	1-8,14

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Information on patent family members

International application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2017192385	A1	09-11-2017	AR 108222 A1 01-08-2018 AU 2017261187 A1 04-10-2018 BR 112018069578 A2 22-01-2019 CA 3023208 A1 09-11-2017 CL 2018003021 A1 15-02-2019 CN 109311841 A 05-02-2019 CO 2018011825 A2 22-11-2018 EA 201892191 A1 30-04-2019 EP 3452460 A1 13-03-2019 JP 6370504 B2 08-08-2018 JP 2018517716 A 05-07-2018 KR 20180132100 A 11-12-2018 TW 201803863 A 01-02-2018 US 2018186778 A1 05-07-2018 WO 2017192385 A1 09-11-2017
WO 2010021919	A1	25-02-2010	AU 2009282963 A1 25-02-2010 CA 2734168 A1 25-02-2010 EP 2326177 A1 01-06-2011 JP 2012500270 A 05-01-2012 US 2011306604 A1 15-12-2011 WO 2010021919 A1 25-02-2010
EP 1598343	A1	23-11-2005	AR 049104 A1 28-06-2006 CA 2565568 A1 01-12-2005 EP 1598343 A1 23-11-2005 EP 1751118 A1 14-02-2007 JP 4890452 B2 07-03-2012 JP 2008505855 A 28-02-2008 TW 200607806 A 01-03-2006 US 2005261295 A1 24-11-2005 WO 2005113515 A1 01-12-2005
JP 2001172258	A	26-06-2001	NONE
WO 0048992	A1	24-08-2000	AU 2560700 A 04-09-2000 EP 1157003 A1 28-11-2001 JP 2002537285 A 05-11-2002 WO 0048992 A1 24-08-2000
WO 9205163	A1	02-04-1992	CA 2090857 A1 18-03-1992 EP 0549600 A1 07-07-1993 FI 931157 A 16-03-1993 IE 913254 A1 25-02-1992 JP H0667915 B2 31-08-1994 JP H05506244 A 16-09-1993 PT 98981 A 31-07-1992 WO 9205163 A1 02-04-1992
WO 2015035003	A1	12-03-2015	NONE
WO 2011156674	A2	15-12-2011	EP 2580191 A2 17-04-2013 US 2013096092 A1 18-04-2013 WO 2011156674 A2 15-12-2011
WO 2012080376	A1	21-06-2012	AR 084308 A1 08-05-2013 BR 112013014986 A2 12-07-2016 CN 103261188 A 21-08-2013

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Information on patent family members

International application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		EP 2651921 A1	23-10-2013
		US 2013253011 A1	26-09-2013
		UY 33808 A	31-07-2012
		WO 2012080376 A1	21-06-2012

WO 2018172471 A1	27-09-2018	AR 111248 A1	19-06-2019
		TW 201840542 A	16-11-2018
		WO 2018172471 A1	27-09-2018

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9, 14-24(all partially)

Compounds of claim 1 of formula (I) and compounds of claim 9 of formula (a*) wherein R2 is the first option (specification of page 210, line 13 to page 211, line 8) [the compounds of claim 9 are intermediates in the preparation of compounds of claim 1]

2. claims: 10-13(completely); 1-9, 14-24(partially)

Compounds of claim 1 of formula (I) and compounds of claim 9 of formula (a*) wherein R2 is the second option (specification of page 211, line 10 to page 213, line 22) as well as compounds of claims 10 to 12 of formulae (b*), (c*) and (d*) as well as the two specific compounds of claim 13 [the compounds of claims 9 to 13 are intermediates in the preparation of compounds of claim 1]

3. claims: 1-9, 14-24(all partially)

Compounds of claim 1 of formula (I) and compounds of claim 9 of formula (a*) wherein R2 is the third option (specification of page 213 line 22 to page 214, line 8) [the compounds of claim 9 are intermediates in the preparation of compounds of claim 1]

4. claims: 1-9, 14-24(all partially)

Compounds of claim 1 of formula (I) and compounds of claim 9 of formula (a*) wherein R2 is the fourth option (specification of page 214 line 8 to line 24) [the compounds of claim 9 are intermediates in the preparation of compounds of claim 1]

5. claims: 1-9, 14-24(all partially)

Compounds of claim 1 of formula (I) and compounds of claim 9 of formula (a*) wherein R2 is the fifth option (specification of page 214, line 26 to page 215, line 22) [the compounds of claim 9 are intermediates in the preparation of compounds of claim 1]
