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14 July 2016



WO 2016/079110 A3

(54) Title: USE OF ENZYME FOR CLEANING

(57) Abstract: The present invention relates to the use of an enzyme composition for cleaning in place.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/076806

A. CLASSIFICATION OF SUBJECT MATTER
INV. C11D3/386
ADD.

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)
C11D

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 071 356 A (OLSEN HANS SEJR [DK]) 6 June 2000 (2000-06-06) column 4, line 56 - line 61; claims 1-12; examples 1-9	1-16
X	----- WO 2013/076269 A1 (NOVOZYMES AS [DK]) 30 May 2013 (2013-05-30) SEQ ID NO:6 is 100% identical to seq ID NO: 1 of the present application over the full length; page 69, line 8 - line 10; claim 6; sequence 6 page 1, line 9 - line 16	1-16
X	----- US 2014/261546 A1 (ERICKSON ANTHONY W [US] ET AL) 18 September 2014 (2014-09-18) cited in the application claims 1-20; example 1 ----- -/--	1-16



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

24 May 2016

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INTERNATIONAL SEARCH REPORT

International application No
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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 0 662 136 B1 (GENENCOR INT [US]) 8 May 2002 (2002-05-08) paragraphs [0001], [0002], [0005]; sequence 4 -----	1-16
X	DE 10 2009 027540 A1 (HENKEL AG & CO KGAA [DE]) 6 May 2010 (2010-05-06) paragraph [0012]; claims 1-15; figure 1; sequence 5 -----	1-16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2015/076806

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.:

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-16(partially)

Use of an enzyme having proteolytic activity and which is derived from *Bacillus licheniformis* and/or has at least 65% identity to SEQ ID NO:1, for cleaning-in-place of process or production equipment.

Detergent composition for cleaning in place comprising an enzyme having proteolytic activity and which is derived from *Bacillus licheniformis* and/or has at least 65% identity to SEQ ID NO:1, a carbonate source, water and optionally a surfactant.

A method for cleaning-in-place, wherein the wash liquor comprises a carbonate source and an enzyme having proteolytic activity and which is derived from *Bacillus licheniformis* and/or has at least 65% identity to SEQ ID NO:1.

2. claims: 1-16(partially)

Use of an enzyme having proteolytic activity and which is derived from *Bacillus halodurans* and/or has at least 65% identity to SEQ ID NO:3, for cleaning-in-place of process or production equipment.

Detergent composition for cleaning in place comprising an enzyme having proteolytic activity and which is derived from *Bacillus halodurans* and/or has at least 65% identity to SEQ ID NO:3, a carbonate source, water and optionally a surfactant.

A method for cleaning-in-place, wherein the wash liquor comprises a carbonate source and an enzyme having proteolytic activity and which is derived from *Bacillus halodurans* and/or has at least 65% identity to SEQ ID NO:3.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2015/076806

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6071356	A	06-06-2000	NONE
WO 2013076269	A1	30-05-2013	CN 103958657 A 30-07-2014
			EP 2782988 A1 01-10-2014
			JP 2015500006 A 05-01-2015
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			CA 2145420 A1 31-03-1994
			DE 69331907 D1 13-06-2002
			DE 69331907 T2 05-09-2002
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