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MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO,
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(54) Title: PROCESS FOR PREPARATION OF AMORPHOUS CARVEDILOL PHOSPHATE

(57) Abstract: The present invention relates to a process for the preparation of amorphous carvedilol phosphate comprising; adding carvedilol base or carvedilol phosphate to a solvent consisting of water miscible cyclic ether(s) or aliphatic nitrile(s) or a mixture thereof and optionally adding water; optionally, adding orthophosphoric acid or its diluted solution to the preceding; and spray drying the solution thus obtained to afford amorphous carvedilol phosphate.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC⁸: **C07D 209/88** (2006.01)

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)

IPC⁸: C07D

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)
STN-Database, EPOQUE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 2008/084494 A1 (MATRIX LABORATORIES LIMITED) 17 July 2008 (17.07.2008) <i>examples 22-29, 37</i>	1-10
P,X	<i>claims 7-9, 42-50, 55-58, 60-65</i>	
Y	WO 2007/144900 A2 (MATRIX LABORATORIES LIMITED) 21 December 2007 (21.12.2007) <i>claims 8-11,</i>	1-10
Y	WO 2008/002683 A2 (TEVA PHARMACEUTICAL INDUSTRIES LTD.) 3 January 2008 (03.01.2008) <i>claim 182,</i>	1-10

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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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.
A	US 4503067 A (WIEDEMANN, F. et AL.) 5 March 1985 (05.03.1985) <i>whole document</i>	1-10

INTERNATIONAL SEARCH REPORT
Information on patent family members

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Patent document cited in search report			Publication date		Patent family member(s)	Publication date
WO	A	2008084494			US A1 2008167477	2008-07-10
					WO A1 2008084494	2008-07-17
WO	A	2007144900			US A1 2009259051	2009-10-15
					WO A2 2007144900	2007-12-21
WO	A	2008002683			US A1 2009286845	2009-11-19
					US A1 2009286844	2009-11-19
					WO A2 2008002683	2008-01-03
					WO A1 2008105794	2008-09-04
					US A1 2008125476	2008-05-29
					US A1 2008207726	2008-08-28
US	A	4503067			BG B2 61419B	1997-07-31
					LT R3 2628R	1994-04-25
					NL I1 930110I	1993-10-18
					LU A9 88320	1994-05-04
					LV A3 5234	1993-10-10
					MX A 9203380	1992-09-01