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(54) Title: PROCESS FOR MAKING A COMPOUND CONTAINING CYCLIC AND LINEAR CARBONATE GROUPS

(57) Abstract: The invention relates to a process for the preparation of compound(s) comprising at least one acrylate or methacrylate group, at least one linear carbonate group and at least one 5-membered cyclic carbonate group. The process comprises (A) a selective ring-opening step and (B) a (meth)acrylation step. The process is environment-friendly and compounds obtained are usable in radiation curable compositions, for example in radiation-curable inks.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 02/08723

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07D317/36

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)
IPC 7 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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	COUVRET D ET AL: "NEW FUNCTIONALIZATION METHOD FOR RADIATION CURABLE POLYURETHANES CONTAINING PENDANT ACRYLATE GROUPS" EUROPEAN POLYMER JOURNAL, PERGAMON PRESS LTD. OXFORD, GB, vol. 27, no. 2, 1991, pages 193-197, XP000206359 ISSN: 0014-3057 page 194, left-hand column page 196; example 7 ---	1-14
Y	US 5 658 989 A (NAKANO SHINJI ET AL) 19 August 1997 (1997-08-19) column 5, line 35 -column 6, line 4 --- -/--	1-14

Further documents are listed in the continuation of box C.

Patent family members are listed in 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 document 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

11 December 2002

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 02/08723

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 423 235 A (BURGARD MICHEL ET AL) 27 December 1983 (1983-12-27) column 3, line 51 -column 4, line 68 examples 4,7 -----	1-14
Y	US 3 225 008 A (D ALELIO GAETANO F) 21 December 1965 (1965-12-21) column 1, line 64 -column 3, line 14 -----	1-14
Y	US 2 979 514 A (BEAVERS ELLINGTON M ET AL) 11 April 1961 (1961-04-11) claim 1 -----	1-14
Y	US 6 001 535 A (CASSER CARL ET AL) 14 December 1999 (1999-12-14) cited in the application column 5, line 40 -column 6, line 3 -----	1-14
Y	US 5 047 261 A (MOUSSA KHALIL ET AL) 10 September 1991 (1991-09-10) cited in the application column 4, line 24 -column 5, line 19; claim 1 -----	1-14
A	US 5 763 622 A (CASSER CARL ET AL) 9 June 1998 (1998-06-09) column 13, line 28 -column 14, line 63 -----	1-14

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 02/08723

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

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 fee, this Authority did not invite payment of any additional fee.
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.:

1-14

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

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

1. Claims: 1-14

process for the preparation of known compounds containing linear and cyclic carbonate groups

2. Claims: 15-17

use of the known compounds made by the process of claims 1-14

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 02/08723

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