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(71) Applicant: **ROHM AND HAAS COMPANY**
[US/US]; 100 Independence Mall West, Philadelphia,
PA 19106-2399 (US).

(72) Inventor: **SLONE, Robert, Victor**; 1605 Sleepy Hollow
Road, Quakertown, PA 18951 (US).

(74) Agents: **CHOI, Wendy, A.** et al.; Rohm and Haas
Company, 100 Independence Mall West, Philadelphia, PA
19106-2399 (US).

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(54) Title: METHODS AND COMPOSITIONS INVOLVING POLAR MONOMERS AND MULTIVALENT CATIONS

(57) Abstract: The present invention is directed, in part, to improved polymer compositions and processes for preparing same. Specifically, in one embodiment, there is provided a process for preparing a polymer, wherein the process comprises: providing a reaction mixture comprising a portion of at least one polar monomer and at least one multivalent cation; adding the remaining portion of the polar monomer to the reaction mixture; and polymerizing the monomer to form the polymer. In certain embodiments, the reaction mixture in the providing step comprises at least two molar equivalents or greater of the total amount of polar monomer with respect to one molar equivalent of multivalent cation.



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A. CLASSIFICATION OF SUBJECT MATTER
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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)

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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)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 125 519 A (COATEX SA) 21 November 1984 (1984-11-21) example 1	1-22
A	US 4 057 683 A (ELTING KATHERINE ANNE CLINE) 8 November 1977 (1977-11-08) the whole document	1-22

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Pollio, M

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Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0125519	A	21-11-1984	FR 2544722 A1	26-10-1984
			CA 1223686 A1	30-06-1987
			DE 3460245 D1	24-07-1986
			EP 0125519 A1	21-11-1984
			JP 60006777 A	14-01-1985
			NO 841551 A ,B,	22-10-1984
			US 5180790 A	19-01-1993
US 4057683	A	08-11-1977	AU 505580 B2	22-11-1979
			AU 2299477 A	14-09-1978
			CA 1105178 A1	14-07-1981
			DE 2710770 A1	22-09-1977
			FR 2344574 A1	14-10-1977
			GB 1515826 A	28-06-1978
			NO 770719 A	16-09-1977