

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 October 2003 (02.10.2003)

PCT

(10) International Publication Number
WO 03/080688 A1

(51) International Patent Classification⁷: **C08F 122/04**

63 Thomas Olney Common, Providence, RI 02904 (US).
REDDY, Ashok; 3902 Spring Valley Way, Louisville, KY
40241 (US).

(21) International Application Number: PCT/US03/05867

(22) International Filing Date: 27 February 2003 (27.02.2003)

(74) Agent: **GREELEY, Paul, D.**; Ohlandt, Greeley, Ruggiero
& Perle, L.L.P., 10th Floor, 1 Landmark Square, Stamford,
CT 06901 (US).

(25) Filing Language: English

(26) Publication Language: English

(81) Designated States (*national*): JP, KR, SG.

(30) Priority Data:
60/365,586 19 March 2002 (19.03.2002) US

(84) Designated States (*regional*): European patent (AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
IE, IT, LU, MC, NL, PT, SE, SI, SK, TR).

(71) Applicant: **ARCH SPECIALTY CHEMICALS, INC.**
[US/US]; 501 Merritt 7, P.O. Box 5204, Norwalk, CT
06856-5204 (US).

Published:
— with international search report

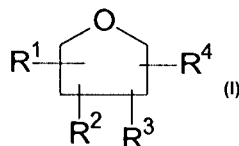
(72) Inventors: **DILLOCKER, Stephanie**; 80 Sweet Avenue,
Pawtucket, RI 02861 (US). **MALIK, Sanjay**; 40 Gay-
wood Avenue, Attleboro, MA 02703 (US). **DE, Binod**;

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.



WO 03/080688 A1

(54) Title: A NOVEL PROCESS FOR PRODUCING ANHYDRIDE-CONTAINING POLYMERS FOR RADIATION SENSITIVE COMPOSITIONS



solvent, and any low boiling volatile reaction products.

(57) Abstract: A synthetic process comprising the following steps: providing a reaction mixture comprising: an ethylenically unsaturated anhydride monomer, at least one ethylenically unsaturated non-anhydride monomer, a free radical initiator, and an alkyl substituted THF solvent having the general structure of formula 1, where R¹, R², R³, and R⁴ are independently chosen from the group hydrogen and C₁-C₄ linear or branched alkyl with the proviso that at least one of R¹, R², R³, and R⁴ is not H; polymerizing the reaction mixture; and removing, by distillation, unreacted monomers, the alkyl substituted THF