

03 SEP 2003



200 30 48980

162162

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
19 September 2002 (19.09.2002)

PCT

(10) International Publication Number
WO 02/073307 A3(51) International Patent Classification⁷: C08F 8/32,
36/20, 236/20, C08L 45/00, B32B 27/06, G03C 1/93Teakwood Drive, Cumberland, RI 02864 (US). **BLAK-
ENEY, Andrew, J.**; 30 Brookside Court, Seekonk, MA
02771 (US).

(21) International Application Number: PCT/US02/07136

(22) International Filing Date: 7 March 2002 (07.03.2002)

(74) Agent: **GREELEY, Paul, D.**; Ohlandt, Greeley, Ruggiero
& Perle, One Landmark Square, 10 th floor, Stamford, CT
06901-2682 (US).

(25) Filing Language: English

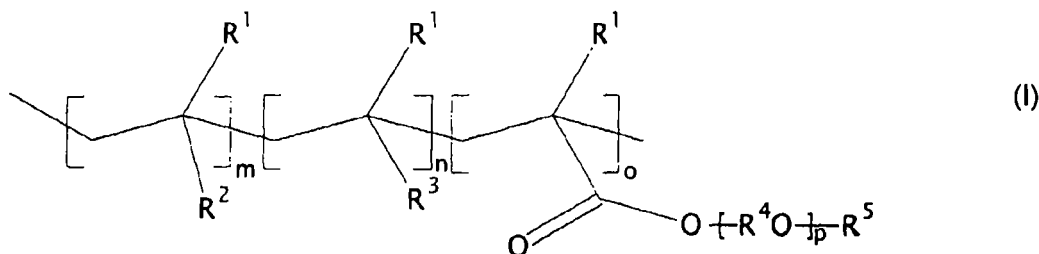
(26) Publication Language: English

(81) Designated States (*national*): JP, KR, SG.(30) Priority Data:
60/275,528 13 March 2001 (13.03.2001) US(84) Designated States (*regional*): European patent (AT, BE,
CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE, TR).(71) Applicant: **ARCH SPECIALTY CHEMICALS, INC.**
[US/US]; 501 Merritt 7, P.O. Box 4500, Norwalk, CT
06856-4500 (US).

Published:

— with international search report
— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments(72) Inventors: **BINOD, B., De**; 11 Stephen Hopkins Court,
Providence, RI 03904 (US). **MALIK, Sanjay**; 40 Gay-
wood Avenue, Attleboro, MA 02703 (US). **SPAZIANO,
Gregory, Dominic**; 88 Parade Street, Providence, RI
02909 (US). **BIAFORE, John, Joseph**; 207 Lexington
Avenue, Providence, RI 02907 (US). **FOSTER, Patrick**;
48 North Court Street, Providence, RI 02903 (US).
SLATER, Sidney, George; 20 Teakwood Drive, Cum-
berland, RI 02864 (US). **STEINHAUSLER, Thomas**; 20(88) Date of publication of the international search report:
21 November 2002For 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.

(54) Title: THERMALLY CURED UNDERLAYER FOR LITHOGRAPHIC APPLICATION

(57) Abstract: Thermally cured undercoat for use in lithography of a thermally cured composition comprising a hydroxyl-containing polymer, an amino cross-linking agent and a thermal acid generator, wherein the hydroxyl containing polymer is a polymer comprising units m, n and o of the formula (I) wherein R¹ is H or methyl; R² is a substituted or unsubstituted C₆-C₁₄ aryl acrylate or C₆-C₁₄ aryl methacrylate group wherein the substituted groups may be phenyl, C₁₋₄ alkyl or C₁₋₄ alkoxy; R³ is a hydroxyl functionalized C₁-C₈ alkyl acrylate, methacrylate or C₆-C₁₄ aryl group, R⁴ is a C₁-C₁₀ linear or branched alkylene; p is an integer of from 1 to 5 with the proviso that there are no more than thirty carbon atoms in the [-R⁴O-]_p; R⁵ is a C₁-C₁₀ linear, branched or cyclic alkyl, substituted or unsubstituted C₆-C₁₄ aryl, or substituted or unsubstituted C₇-C₁₅ alicyclic hydrocarbon; and m is about 40 to 70, n is about 15 to 35 and o is about 15 to 25.

WO 02/073307 A3



ACTION