

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 February 2006 (09.02.2006)

PCT

(10) International Publication Number
WO 2006/014852 A3

(51) International Patent Classification:

C08J 3/24 (2006.01) *C08L 101/14* (2006.01)
C08J 3/075 (2006.01) *A61L 15/60* (2006.01)

(21) International Application Number:

PCT/US2005/026236

(22) International Filing Date: 25 July 2005 (25.07.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

04017794.1 28 July 2004 (28.07.2004) EP
05002556.8 8 February 2005 (08.02.2005) EP

(71) Applicant (for all designated States except US): **THE PROCTER & GAMBLE COMPANY** [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **FLOHR, Andreas** [DE/DE]; Am Eichbühl 1, 61476 Kronberg (DE). **LINDER, Torsten** [DE/DE]; Im Wiesental 17, 61476 Kronberg (DE).

(74) Common Representative: **THE PROCTER & GAMBLE COMPANY**; c/o REED, T., David, The Procter & Gamble Company, Winton Hill Business Center, 6110 Center Hill Road, Cincinnati, OH 45224 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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

(88) Date of publication of the international search report:
30 March 2006

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

(54) Title: SUPERABSORBENT POLYMERS COMPRISING DIRECT COVALENT BONDS BETWEEN POLYMER CHAIN SEGMENTS AND METHOD OF MAKING THEM

(57) Abstract: The present invention refers to superabsorbent polymers comprising polymer chain segments. At least a part of the polymer chain segments are crossing-linked to each other through covalent bonds, wherein the covalent bonds are formed directly between polymer chain segments by reaction with a radical former molecules, the radical former molecules being able to form bi-radicals. The present invention refers further to a method of cross-linking superabsorbent polymers which comprises the steps of: a) providing a superabsorbent polymer comprising polymer chain segments, and b) providing radical former molecules, the radical former molecules being able to form bi-radicals upon electromagnetic irradiation, and c) exposing the superabsorbent polymer and the radical former molecules to electromagnetic irradiation, thereby forming direct covalent bonds between the polymer chain segments.

WO 2006/014852 A3