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(21) International Application Number: PCT/US95/04472 ✓ (22) International Filing Date: 7 April 1995 (07.04.95) ✓ (30) Priority Data: 08/309,993 20 September 1994 (20.09.94) ✓US (71) Applicant: THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). ✓ (72) Inventors: PHAN, Dean, Van; 6512 Tylers Crossing, West Chester, OH 45069 (US). TROKHAN, Paul, Dennis; 1356 Warvel Road, Hamilton, OH 45013 (US). (74) Agents: REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217 (US).		(81) Designated States: AM, AU, BB, BG, BR, BY, CA, CN, CZ, FI, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TT, UA, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ, UG). Published <i>With international search report.</i> SG 9701154-8
(54) Title: PAPER PRODUCTS CONTAINING A BIODEGRADABLE VEGETABLE OIL BASED CHEMICAL SOFTENING COMPOSITION (57) Abstract Fibrous cellulose materials useful in the manufacture of soft, absorbent paper products such as paper towels, facial tissues, and toilet tissue are disclosed. The paper products contain a biodegradable vegetable oil based ester-functional quaternary ammonium chemical softening compound. Examples of preferred vegetable oil based ester-functional quaternary ammonium chemical softening compounds include diester dioleyldimethyl ammonium chloride (DEDODMAC) (i.e., di(octadec-z-9-enoyloxyethyl)dimethylammonium chloride) and diester dierucyldimethyl ammonium chloride (DEDEDMAC) (i.e., di(docos-z-13-enoyloxyethyl)dimethylammonium chloride). Depending upon the paper product characteristic requirements, the saturation level of the fatty acyl groups of the vegetable oils can be tailored. Variables that need to be adjusted to maximize the benefits of using unsaturated vegetable oil based acyl groups include the Iodine Value (IV) of the fatty acyl groups; and the cis/trans isomer weight ratios in the fatty acyl groups.		

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