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(21) International Application Number: PCT/US94/05778 (22) International Filing Date: 23 May 1994 (23.05.94) (30) Priority Data: 08/072,297 3 June 1993 (03.06.93) US (71) Applicant: THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). (72) Inventors: LAUGHLIN, Robert, Gene; 11641 Bank Road, Cincinnati, OH 45251 (US). PHAN, Dean, Van; 6512 Tylers Crossing, West Chester, OH 45069 (US). TROKHAN, Paul, Dennis; 1356 Warvel Road, Hamilton, OH 45013 (US). TRINH, Toan; 8671 Creekwood Lane, Maineville, OH 45039 (US). (74) Agents: REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45202 (US).		(81) Designated States: AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, 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). Published <i>With international search report.</i>
(54) Title: WATERLESS SELF-EMULSIFIABLE BIODEGRADABLE CHEMICAL SOFTENING COMPOSITION USEFUL IN FIBROUS CELLULOSIC MATERIALS		
(57) Abstract Substantially waterless self-emulsifiable biodegradable chemical softening compositions are provided comprising a mixture of an ester-functional quaternary ammonium compound and a polyhydroxy compound. Preferred biodegradable ester-functional quaternary ammonium compounds include diesterdialkyl dimethyl ammonium salts such as diester ditallow dimethyl ammonium chloride, diester di(tough hydrogenated)tallow dimethyl ammonium chloride and diester di(hydrogenated)tallow dimethyl ammonium chloride. Preferred polyhydroxy compounds are selected from the group consisting of glycerol, polyglycerols having a weight average molecular weight from about 150 to about 800 and polyoxyethylene glycols and polyoxypropylene glycols having a weight average molecular weight from about 200 to about 4000. The substantially waterless self-emulsifiable biodegradable chemical softening compositions are prepared by mixing the ester-functional quaternary ammonium compound with the polyhydroxy compound at a specific temperature range wherein the polyhydroxy compound is miscible with the ester-functional quaternary ammonium compound. The resulting stable solid or concentrated fluid mixture can then be economically shipped to the consumer or ultimate user. The ultimate users of the chemical softening composition simply dilute the mixture with a liquid carrier (e.g., water) to form an aqueous dispersion suitable for treating fibrous cellulosic material. The substantially waterless self-emulsifiable biodegradable chemical softening compositions disclosed herein are primarily intended for softening disposable paper products such as tissues and towels.		

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