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[54] **CATIONIC FILM-FORMING POLYMER COMPOSITIONS, AND USE THEREOF IN TOPICAL AGENTS DELIVERY SYSTEM AND METHOD OF DELIVERING AGENTS TO THE SKIN**

[75] Inventors: **Carlos M. Samour**, Newport, R.I.; **Scott F. Krauser**, Methuen, Mass.

[73] Assignee: **MacroChem Corporation**, Lexington, Mass.

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[58] **Field of Search** 528/49, 71; 560/33, 560/115, 132, 25; 424/59, 70.11, 78.02, 401, 78.03, 78.05, 78.07, 78.08; 514/478, 479, 944, 945, 969, 506

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Primary Examiner—Rachel Gorr
Attorney, Agent, or Firm—Sherman and Shalloway

[57] **ABSTRACT**

A mixture of lipophilic and amphiphilic/hydrophilic film-forming polymers of the formula (I)

$$R—(CO)_mY^1—(CH_2CHR^1O)_n—[CONH—Z—NHCO(OCH_2CHR^2)_{n'}—Y^2—(CH_2CHR^2O)_{n''}]_p—CONH—Z—NHCO—(OCH_2CHR^1)_n—Y^1(CO)_mR \quad (I)$$

where R represents (i) an alkyl, alkenyl or alkaryl group of from 1 to 30 carbon atoms or (ii) a polypropylene oxide group or polybutylene oxide group; R^1 and R^2, each, independently, represent a hydrogen atom, or a methyl or ethyl group; Z represents a divalent linking hydrocarbyl group; m is 0 or 1; when m=0, Y^1 represents O, NR^3 or $N^+R^3R^4X^-$ and when m=1 Y^1 represents O; Y^2 represents O, NR^3, $N^+R^3R^4X^-$, $(R^3NCH_2CH_2)_t$, or $[(R^3R^4N^+CH_2CH_2)X^-]_t$; R^3 and R^4, independently, represent C_1–C_{22} alkyl; X represents an anion; t is a positive integer; n and n', are each, independently, a positive number; and p is $\geqq 0$, provide a skin substantive, occlusive moisture barrier covering for skin or hair. When Y^1 and Y^2 are O the polymers are nonionic in character when Y^1 or Y^2 represents NR^3 or $N^+R^3R^4X^-$ the polymers are cationic in character. The compositions have a moisturizing effect by reducing transepidermal water loss. The lipophilic or amphiphilic or hydrophilic film-forming polymers may be used individually or as mixtures as a delivery system for delivering pharmacological or cosmetic agents to the skin or hair.

33 Claims, 2 Drawing Sheets