

United States Patent [19]

[11] 4,156,066

Gould

[45] May 22, 1979

[54] **POLYURETHANE POLYMERS
CHARACTERIZED BY LACTONE GROUPS
AND HYDROXYL GROUPS IN THE
POLYMER BACKBONE**

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[21] Appl. No.: 809,260

[22] Filed: Jun. 23, 1977

[51] Int. Cl.² C08G 18/34

[52] U.S. Cl. 528/73; 106/15.05;
204/159.19; 424/32; 424/78; 428/425

[58] Field of Search 260/77.5 AN, 77.5 R,
260/77.5 AP, 77.5 CR; 528/73; 204/159.19;
428/425; 106/15 R; 424/78, 32

[56] **References Cited**

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[57] **ABSTRACT**

Polyurethane polymers characterized by a molecular weight above 6,000 and having lactone groups and hydroxyl groups in the polymer backbone are prepared by reacting a mixture of polyglycols proportioned so as to provide the desired polymer properties, a polyfunctional lactone and a polyfunctional isocyanate. The product is soluble in alkaline solutions and may be used for light sensitive photographic layers on films, paper or glass; in drug delivery systems, as burn dressings, in body implants such as vascular prosthesis, and in the manufacture of catheters. The novel polymers also find use in the manufacture of artificial finger nails, finger cots, adhesives, and in protective and hydrostatic drag resistant coatings. The water absorptivity of the polyurethane lactone polymers is above 10%, preferably above 20%, and these polymers may range to completely gel-like high water absorptive polymers. The polymers of the present invention can provide a leachable substrate wherein the leaching agent may be water, gases, alcohols, esters and body fluids, e.g., animal or human.

34 Claims, No Drawings