

[54] WETTABLE SILICONE RESIN OPTICAL DEVICES AND CURABLE COMPOSITIONS THEREFOR

[75] Inventor: Darrell D. Mitchell, Midland, Mich.

[73] Assignee: Dow Corning Corporation, Midland, Mich.

[21] Appl. No.: 475,270

[22] Filed: Mar. 14, 1983

[51] Int. Cl.<sup>3</sup> ..... C08G 77/06

[52] U.S. Cl. .... 528/15; 351/160 R; 351/160 H; 526/279; 528/31; 528/32; 525/478

[58] Field of Search ..... 351/160 R, 160 H; 526/279; 528/15, 31, 32; 525/478

[56] References Cited

U.S. PATENT DOCUMENTS

2,922,806	1/1960	Merker	260/448.2
3,808,178	4/1974	Gaylord	260/86.1 E
3,925,178	12/1975	Gesser et al.	204/165
4,035,355	7/1977	Baney	260/46.5 Y
4,120,570	10/1978	Gaylord	351/40
4,152,508	5/1979	Ellis et al.	526/279
4,198,131	4/1980	Birdsall et al.	351/160 R
4,235,985	11/1980	Tanaka	526/279
4,280,759	7/1981	Neeffe	351/160 R
4,306,042	12/1981	Neeffe	526/75
4,414,375	11/1983	Neeffe	526/260
4,424,328	1/1984	Ellis	526/279

FOREIGN PATENT DOCUMENTS

2023628	1/1980	United Kingdom .
2111241	6/1983	United Kingdom .
2117387	10/1983	United Kingdom .

Primary Examiner—Melvyn I. Marquis  
Attorney, Agent, or Firm—Richard E. Rakoczy

[57] ABSTRACT

This invention provides novel compositions curable to resins and particularly provides oxygen permeable, inherently wettable optical devices useful as eye contact or intraocular lenses. The lenses are composed of a cured polysiloxane resin having an advancing water-in-air contact angle of no greater than 80°. The polysiloxane resin is prepared from a catalyzed mixture of an acrylate-functional polysiloxane composition and an organosilicon cross-linking agent containing silicon hydride radicals. The acrylate-functional polysiloxane composition contains a sufficient amount of aliphatically unsaturated hydrocarbon radicals (e.g., vinyl radicals) other than acrylate-functional radicals to enable that composition to react on a mole to mole basis with the cross-linking agent to produce a cured polysiloxane resin. To provide the desired level of surface wettability, the acrylate-functional polysiloxane composition also contains an effective amount, typically from 7 to 30 mole percent of the total moles of siloxane units present in the cured polysiloxane resin, of H<sub>2</sub>C=CRCOOR'Si-O<sub>1.5</sub> units to provide the aforementioned advancing water-in-air contact angles. The catalyzed mixture only contains a sufficient amount of cross-linking agent to react with the aliphatically unsaturated hydrocarbon radicals other than the acrylate-functional radicals and thus enables the unreacted acrylate-functional siloxane units to provide the desired wettability characteristics to the cured polysiloxane resin.

20 Claims, No Drawings