It also contains a catalytic amount of an organo platinum catalyst from a group known to the art. Part B of the above resin is a copolymer whose major component is dimethyl siloxane and about 1 to 2% of —O—$SiH(CH_3)_2$ units. When the part A and B components are mixed immediately prior to use, the platinum compound catalyzes a reaction between the vinyl and →SiH groups to form new chemical bonds and ultimately a cross-linked elastomeric mass.

The silica-filled mixture as described above was used to make contact lenses. It was found to have adequate strength but adequate optical clarity, even when in sections only 0.10 millimeters thick.

Dr. David Miller, in the Contact Lens Journal, April 1972, Page 38, described the use of this resin mixture for contact lenses.

EXAMPLE 2

A two-part silicon potting resin from General Electric known as RTV 655 was mixed with fume silica filler so that the final mixture contained 100 parts of Part A, 10 parts of Part B and 11 parts of fume silica filler (all parts by weight). Part A of this resin is a terpolymer of about 0.3 mole % of a vinyl siloxane, about 6 mole percent diphenyl siloxane and the remainder dimethyl siloxane. Part A also contains a catalytic amount of an organo platinum catalyst from a group known to the art. Part B of the above resin is a copolymer that contains about 1 to 2 mole percent —O—$SiH(CH_3)_2$ units, about 6 mole percent diphenyl siloxane and the remainder dimethyl siloxane units. When the Part A and B components are mixed immediately prior to use, the platinum compound catalyzes a reaction between the vinyl and →SiH groups to form new chemical bonds and ultimately a cross-linked elastomeric mass. The filler may be mixed with Parts A and B in any order. It is usually most convenient to mix the filler with the A component first and then to mix that mixture with the B component. This mixture was used to make contact lenses. It was found to have adequate strength and to have sufficient optical clarity to be useful for contact lenses. The haze of this filled material was barely measurable in sections less than 1mm thick and much less than that of the filled RTV 615 of Example 1.

These silicone coating materials may contain treated or untreated fume silica filler or no filler as desired depending upon the mechanical and other properties desired. Such compositions are known in the literature of silicone contact lenses.

Conventional volatile compatible solvent may be used to thin this coating liquid if desired, however it is not necessary.

The preferred method of application, because of its ease, is to coat the lens with the liquid while the lens is still mounted in the chuck and after it has been cut to its desired shape, the lens is then spun at moderate to high speed for a short time to enable excess liquid to flow off the edge. The speed and time to make a coating of the desired thickness may of course vary depending upon the conditions of manufacture, however a speed of 1000 to 30,000 RPM for 1 to 100 seconds is usually sufficient.

To cure this coating as quickly as possible, a stream of warm air with a controlled desired temperature may be directed at the freshly coated lens for a few seconds or minutes. The cure times for the 615 and 655 liquids are 60 seconds at 150° C or 6 seconds at 200° C. The curing lens should be rotating slowly (100 to 1000 RPM) while curing proceeds. Alternatively, the lens may be removed from its mandrel and cured in a hot air oven at a lower temperature for a longer period of time.

EXAMPLE 3

Contact lenses were cast using the procedure and composition of Example 2. These lens edges were then machined to the desired contour. Before the lenses were removed from the mandrel on which they were mounted during machining, the lens edges were lightly coated with unfilled diluted RTV-655 (100 parts A, 10 parts B, about 110 toluene) by daubing. The coated lenses were then spun at about 2000 RPM for several seconds to evenly distribute the coating and simultaneously jets of air were directed onto the lenses to assist the removal of excess liquid. The lenses, still on the mandrels, were oven cured at 90° C for 1 hour. Examination showed that the edges were acceptable for fitting to the human eye and that the roughness and tears from machining were substantially eliminated.

The lens treated in this manner also has the advantage that it may be placed in contact with a mold while curing and is thus capable of forming a precisely formed edge.

What is claimed is:

1. A silicone contact lens comprising a cured, filled, silicone substrate having machined surfaces and an evenly distributed, unfilled, subsequently cured silicone coating on the substrate, wherein the substrate comprises 80 to 95% by weight of
   a. a copolymer comprising
      i. dimethyl siloxane,
      ii. diphenyl siloxane, or phenylmethyl siloxane or mixtures thereof, and
      iii. vinyl siloxane;
   b. a copolymer comprising
      i. dimethyl siloxane
      ii. diphenyl siloxane or phenylmethyl siloxane or mixtures thereof, and
      iii. siloxane having $(R)_2HSiO$— or —O—SiH-R—O— groups, or both, wherein R is methyl or ethyl; with the proviso that each of fractions (a) and (b) has 6 to 16 mole percent phenyl and each contains no Part (iii) of the other;
   c. 5 to 20% of a silica filler, the refractive index of said copolymer being substantially the same as the index of refraction of (c) and the coating liquid consists of a vulcanized mixture of (a) and (b).

2. The contact lens of claim 1 wherein the substrate is a filled RTV 655 elastomer and the coating is an unfilled RTV 655 elastomer.

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