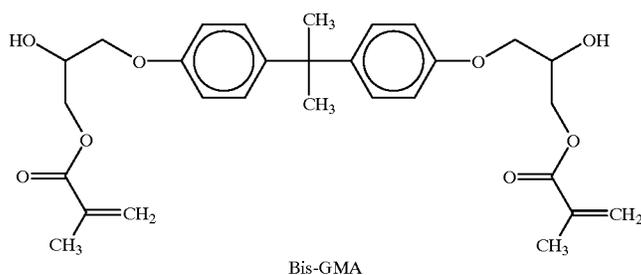


R<sub>10</sub> is an aliphatic, cycloaliphatic, or aryl group which can optionally be substituted with a group from the group consisting of an acrylic group, a methacrylic group, an epoxy group, and a substituted amino, hydroxyl, or carboxylic acid group such as an ester or an amide. 5

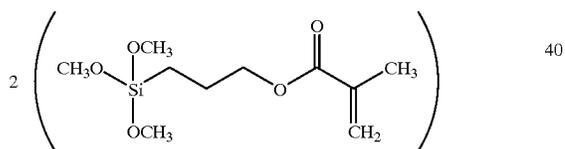
The invention is directed to silylation exchange reactions conducted at moderate temperatures of approximately 23–100° C., either with or without the presence of catalysts or solvents, between hydroxylated resins such as Bis-GMA with silane agents such as MPTMS. The viscosities of the resulting resins generally are equal to, or less than, the viscosity of the Bis-GMA. 10

The treatment of inorganic substrates such as silica glass, alumina, and other mineral fillers with silane agents such as MPTMS is commonly referred to as silanation. In this specification, the term “silylation” denotes the exchange reaction that occurs between the silane agent and an organic compound that has protic functional groups such as hydroxyl groups, carboxylic acid groups, or amine groups. 20

For example, as indicated below, one mole of Bis-GMA:



reacts stoichiometrically with two moles of MPTMS:



to produce the monosilylated resin compound:

