"parts" refers to parts by weight, unless otherwise indicated.

EXAMPLE 1

Part A of a two-part discernible pit and fissure sealant is prepared by mixing together the following ingredients, in the amounts stated, in a Waring blender.

Ingredient	Parts
Bis-GMA resin	45.48
Triethyleneglycol dimethacrylate	50.20
Dihydroxyethyl-p-toluidine	2.40
Silane-treated titanium dioxide	2.13
Hydrophobic sub-micron silica	6.38
Inhibitor	0.12
U.V. absorber	1.8

The resulting composition exhibited a viscosity of about 700 centipoise and was shelf-stable for prolonged periods.

The hydrophobic sub-micron silica had a primary particle size of 10–30 millimicrons and is commercially available from Degussa, Inc. under the name "Aerosil R-972".

The titanium dioxide used in this example had a median particle diameter of 0.21 micron and was treated with an organosilane ("A-174", available from Union Carbide) by adding 89.4 parts of titanium dioxide to 5 parts of toluene (which contained 4 parts of the organosilane in solution) and 1.6 parts of processing aid ("Aerosil R-972"), after which the material was blended in a "PK" blender for approximately 30 minutes. The material was dried in trays at 100–110° C. for 3 hours.

Part B of the two-part discernible pit and fissure sealant is prepared by mixing together the following ingredients, in the amounts stated:

Ingredient	Parts
Bis-GMA resin	51.42
Triethyleneglycol dimethacrylate	46.58
Benzoyl Peroxide	1.13
U.V. absorber	0.8
Inhibitor	0.007

Thus, Part B in this example does not contain either opaquing filler or suspending agent and has a viscosity in the range of about 200 to 300 centipoise.

A very effective pit and fissure sealant is obtained by mixing approximately equal volumes of Part A and Part B and immediately applying such mixture (having a viscosity below 600 centipoise) to occlusal tooth surfaces which have been etched with a 30–40% phosphoric acid solution in conventional manner. The sealant is hardened in a few minutes.

If desired, Part B of this example may also contain hydrophobic opaquing filler and hydrophobic suspending agent, in which case the amount of these materials in Part A should be reduced accordingly so that the viscosity of the Part A/Part B mixture is not greater than 600 centipoise.

EXAMPLE 2

To demonstrate the stability of Part A of Example 1, a sample of such material is placed in a tube (10×75 mm.) and centrifuged. After centrifuging for one hour the titanium dioxide is uniformly suspended throughout the entire height (75 mm.) of the sample (i.e. there is no separation or settling of the opaque filler). After an additional seven hours of centrifuging, the titanium dioxide is uniformly suspended throughout 74 mm. of the sample (i.e. there is essentially no settling or separation).

EXAMPLE 3

Part A of Example 1 is prepared again except that the titanium dioxide is not treated with the organosilane to render it hydrophobic. A sample of the composition is placed in a tube (10×75 mm.) and centrifuged. After one hour a considerable portion of the titanium dioxide has settled toward the bottom of the tube, and after an additional seven hours of centrifuging the titanium dioxide has settled to a height of 15 mm.

Repeating Example 3 using sub-micron silica which is not hydrophobic shows similar results (i.e. the titanium dioxide does not remain stably dispersed on centrifuging).

EXAMPLE 4

Part A of Example 1 is prepared again except that no sub-micron silica is included in the composition. A sample of the composition is placed in a tube (10×75 mm.) and centrifuged. After one hour the titanium dioxide has settled to a height of only 3 mm. Repeating this example using titanium dioxide which has not been silane treated produces similar results.

EXAMPLE 5

Part A of Example 1 is prepared again except that the sub-micron silica is not of the hydrophobic type. A sample of the composition is placed in a tube (10×75 mm.) and centrifuged. After one hour there is no observable settling or separation of the titanium dioxide. However, after an additional seven hours of centrifuging the titanium dioxide has settled to a height of only 15 mm.

What is claimed is:

1. A manufacture adapted for use in filling and sealing pits and fissures in tooth surfaces, said manufacture being composed of two fluid materials, each having a viscosity in the range of about 200 to 600 centipoise, disposed in separate containers from which a dentist may dispense necessary amounts of material which when mixed together will produce a sealant which is discernible on tooth surfaces, the material in the first of said containers consisting essentially of: polymerizable resin system containing acrylic monomer, finely divided hydrophobic opaquing filler present in an amount of about 0.1 to 5% by weight based on the weight of said resin system, hydrophobic suspending agent present in an amount of about 1 to 10% by weight based on the weight of said resin system, and free-radical-generating catalyst for said system; the material in the second of said containers consisting essentially of: polymerizable resin system containing acrylic monomer, finely divided hydrophobic opaquing filler present in an amount of about 0.1 to 5% by weight based on the weight of said resin system, hydrophobic suspending agent present in an amount of about 1 to 10% by weight based on the weight of said resin system, and accelerator reactive with said catalyst in the material of said first container to cause generation of free radicals in sufficient quantity to produce polymerization of said resin system on a tooth surface.

2. A composition adapted for filling and sealing pits and fissures in tooth surfaces in accordance with claim 1, wherein said opaquing filler comprises silane-treated