Patent Claims

1. A polymerizable resin composition comprising one or more polymerizable resin components selected from the group consisting of polyols, polyamines and mixtures thereof, in particular polyether polyols, polyester polyols, and polybutadiene polyols, aluminum hydroxide, and optionally further additives, such as for example wetting and dispersant additives, dyes, pigments, drying agents, fillers, polyalcohols, butanediol, hexanediol, antifoaming agents, antisettling agents, plasticizers such as for example phosphates, and catalysts, characterized in that the resin contains at least 75 wt.%, and in particular 75 to 85 wt.% of aluminum hydroxide composition relative to 100 wt.% of the resin composition.

2. The polymerizable resin composition as claimed in claim 1, characterized in that this contains at most 0.3, preferably at most 0.25 wt.% of wetting agent and is preferably essentially free from wetting agent.

3. The polymerizable resin composition as claimed in claim 1 or 2, characterized in that the aluminum hydroxide is present in the form of at least four filler components,
wherein the first filler component has an average particle size of 75 to 150 µm, preferably 80 to 125 µm,
wherein the second filler component has an average particle size of 10 to 60 µm, preferably 30 to 50 µm,
wherein the third filler component has an average particle size of 1 to 5 µm, preferably 2 to 4 µm, and
wherein the fourth filler component has an average particle size of 3 µm or less, preferably 0.5 to 3 µm.

4. The polymerizable resin composition as claimed in claim 3, characterized in that a further filler component, which is selected from the group consisting of aluminum hydroxide, aluminum oxide, aluminum nitride, quartz, boron nitride, silicon carbide, magnesium oxide, calcium carbonate, barium sulfate, talc and mixtures thereof, is present.

5. The polymerizable resin composition as claimed in claim 3 or 4, characterized in that the first, second, third and fourth filler component are present in the following proportions relative to 100% of the filler mixture:
first filler component: 40 to 60, preferably 45 to 55 wt.%
second filler component: 5 to 25, preferably 10 to 20 wt.%
third filler component: 10 to 30, preferably 15 to 25 wt.%
fourth filler component: 5 to 25, preferably 10 to 20 wt.%,
wherein the optionally present further filler component(s) is/are assigned to the quantity of the filler component which comes closest to this with regard to the particle size.

6. The polymerizable resin composition as claimed in one of claims 1 to 5, characterized in that relative to 100 wt.% of the resin composition it comprises:
5 to 25, preferably 15 to 25 wt.% of one or more polyols selected from the polyether polyols, polyester polyols, polybutadiene polyols, and hydrophobic aliphatic polyols,
0.05 to 2.5, preferably 0.5 to 1.5 wt.% of a short-chain ether alcohol,
0.0 to 0.25, preferably 0.0 to 0.15 wt.% of a wetting agent, and
75 to 85 wt.% of aluminum hydroxide,
and optionally further additives, such as for example wetting and dispersant additives, dyes, pigments, drying agents, fillers, polyalcohols, butanediol, hexanediol, antifoaming agents, antisettling agents, and plasticizers such as for example phosphates and catalysts.

7. The polymerizable resin composition as claimed in one of claims 1 to 6, characterized in that the resin composition has a viscosity of 1,600 to 30,000 mPa·s, preferably 1,600 to 25,000 mPa·s, at 50°C.

8. A polymer molded article, produced by polymerization of a resin composition as claimed in one of claims 1 to 7.

Patent Claims

1. A polymerizable resin composition comprising one or more polymerizable resin components selected from the group consisting of polyols, polyamines and mixtures thereof, in particular polyether polyols, polyester polyols, and polybutadiene polyols, and aluminum hydroxide, , characterized in that the resin contains at least 75 wt.%, and in particular 75 to 85 wt.% of aluminum hydroxide composition relative to 100 wt.% of the resin composition, wherein
the aluminum hydroxide is present in the form of at least four filler components,
wherein the first filler component has an average particle size of 75 to 150 µm, preferably 80 to 125 µm,
wherein the second filler component has an average particle size of 10 to 60 µm, preferably 30 to 50 µm,
wherein the third filler component has an average particle size of 1 to 5 µm, preferably 2 to 4 µm, and
wherein the fourth filler component has an average particle size of 3 µm or less, preferably 0.5 to 3 µm.

2. The polymerizable resin composition as claimed in claim 1, further comprising further additives, such as for example wetting and dispersant additives, dyes, pigments, drying agents, fillers, polyalcohols, butanediol, hexanediol, antifoaming agents, antisettling agents, plasticizers such as for example phosphates, and catalysts.

3. The polymerizable resin composition as claimed in claim 1, characterized in that this contains at most 0.3, preferably at most 0.25 wt.% of wetting agent and is preferably essentially free from wetting agent.

4. The polymerizable resin composition as claimed in claim 1, characterized in that a further filler component, which is selected from the group consisting of aluminum hydroxide, aluminum oxide, aluminum nitride, quartz, boron nitride, silicon carbide, magnesium oxide, calcium carbonate, barium sulfate, talc and mixtures thereof, is present.

5. The polymerizable resin composition as claimed in claim 1 or 4, characterized in that the first, second, third and fourth filler component are present in the following proportions relative to 100% of the filler mixture:
first filler component: 40 to 60, preferably 45 to 55 wt.%
second filler component: 5 to 25, preferably 10 to 20 wt.%
third filler component: 10 to 30, preferably 15 to 25 wt.%
fourth filler component: 5 to 25, preferably 10 to 20 wt.%,
wherein the optionally present further filler component(s) is/are assigned to the quantity of the filler component which comes closest to this with regard to the particle size.

6. The polymerizable resin composition as claimed in one of claims 1 to 5, characterized in that relative to 100 wt.% of the resin composition it comprises:
5 to 25, preferably 15 to 25 wt.% of one or more polyols selected from the polyether polyols, polyester polyols, polybutadiene polyols, and hydrophobic aliphatic polyols,
0.05 to 2.5, preferably 0.5 to 1.5 wt.% of a short-chain ether alcohol,
0.0 to 0.25, preferably 0.0 to 0.15 wt.% of a wetting agent, and
75 to 85 wt.% of aluminum hydroxide,
and optionally further additives, such as for example wetting and dispersant additives, dyes, pigments, drying agents, fillers, polyalcohols, butanediol, hexanediol, antifoaming agents, antisettling agents, and plasticizers such as for example phosphates and catalysts.

7. The polymerizable resin composition as claimed in one of claims 1 to 6, characterized in that the resin composition has a viscosity of 1,600 to 30,000 mPa·s, preferably 1,600 to 25,000 mPa·s, at 50°C.

8. A polymer molded article, produced by polymerization of a resin composition as claimed in one of claims 1 to 7.