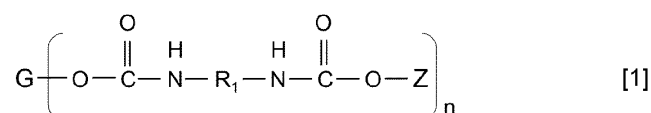


Claims

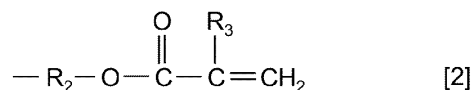
1. A photo-curable hydrophilic coating composition comprising
 - (a) a polymerizable compound of formula [1], wherein G is a residue of a hydrophobic hydroxy-functional oligomer; n is 1-10, each R₁ independently is a residue of a C₆-C₂₀ aliphatic, cycloaliphatic, or aromatic hydrocarbon compound, and Z is a moiety having a polymerizable group;



- (b) a hydrophilic polymer;
 - (c) a photo-initiator;
 - (d) optionally one or more further components, and
 - (e) a solvent for components (a)-(c);

wherein the polymerizable compound of formula [1] is present in an amount of 2.0-30 mass% based on the total dry mass of the composition.
2. The coating composition according to claim 1, wherein n is 1.8 - 3, or preferably 1.8 - 2.2.
3. The coating composition according to claim 1 or 2, wherein G is a residue of a hydroxy-functional hydrophobic oligomer chosen from the group consisting of polyethers, polyesters, polycarbonates, polyurethanes, polyepoxides, polyamides, poly(meth)acrylamides, poly(meth)acrylates, and polyolefins, or any combination thereof.
4. The coating composition according to any one of claims 1-3, wherein the hydroxy-functional oligomer is a polyether, preferably a polytetrahydrofuran diol or a poly(tetrahydrofuran-co-methyl tetrahydrofuran) diol.
5. The coating composition according to any one of claims 1-4, wherein R₁ is a residue of 2,4-toluene, 2,6-toluene, hexane, butane, cyclohexane, or isophorone
6. The coating composition according to any one of claims 1-4, wherein the polymerizable group is an unsaturated group, like an olefinic group, a styrenic group, or a (meth)acrylic group.
7. The coating composition according to any one of claims 1-6, wherein Z is a (meth)acrylic moiety of formula [2], wherein each R₂ independently is a C₁-C₁₀ alkyl,

and each R₃ independently is hydrogen or methyl.



8. The coating composition according to any one of claims 1-7, wherein the polymerizable compound of formula [1] is the reaction product of a polyether diol based on tetrahydrofuran or comprising tetrahydrofuran and methyl tetrahydrofuran, toluene diisocyanate, and hydroxyethyl acrylate.
9. The coating composition according to any one of claims 1-8, wherein the hydrophilic polymer comprises a non-ionic polymer, preferably the hydrophilic polymer is a polyvinylpyrrolidone or a polyethylene oxide.
10. The coating composition according to any one of claims 1-9, wherein the photo-initiator comprises a Norrish type II initiator, preferably the coating composition comprises a mixture of Norrish Type II and Norrish Type I photo-initiators.
11. The coating composition according to any one of claims 1-10, further comprising a surfactant, an antioxidant, an osmolality-increasing compound, and/or a hydrophilic polymerizable compound.
12. The coating composition according to any one of claims 1-11, wherein the composition contains 40-99.5 mass% of solvent, which solvent is a polar organic liquid miscible with water, like at least one of methanol, ethanol, propanol, isopropanol, butanol, isobutanol, t-butanol; acetone, methylethyl ketone, or tetrahydrofuran.
13. The coating composition according to any one of claims 1-12 comprising, based on total dry mass of the composition,
 - 2.0-30 mass% of component (a);
 - 97.8-30 mass% of component (b);
 - 0.2-5 mass% of component (c); and
 - 0-35 mass% of component (d);
 and wherein the sum of (a)-(d) is 100%.
14. A method of applying a hydrophilic and optionally lubricious coating to an article comprising steps of:
 - applying a coating composition according to any one of claims 1-13 to at least a part of a surface of the article;
 - at least partly removing the solvent from the applied coating composition;
 - curing the applied coating composition by exposing to a radiation source during or after removing solvent to form a hydrophilic coating; and
 - optionally contacting the hydrophilic coating with a wetting agent to form a lubricious coating.

15. An article, like a medical device or a component thereof, having on at least part of its surface a single-layer, hydrophilic, and optionally lubricious coating, which article is obtained by the method of claim 14.