

ABSTRACT

There is provided an aqueous surface treatment agent characterized by comprising an acrylic-based resin, water and 5-35 wt% of colloidal silica in terms of solid weight, wherein the acrylic-based resin is a polymer obtained by polymerization reaction of, in terms of solid weight, (a) 15-76 wt% of a (meth)acrylate unsaturated monomer represented by the following general formula (1):



where R^1 is hydrogen or methyl and R^2 is a linear or branched alkyl of 1-8 carbons, (b) 2-10 wt% of an α,β -ethylenic unsaturated monomer with a carboxyl group in the molecule, (c) 2-10 wt% of an α,β -ethylenic unsaturated monomer with a hydroxyl group in the molecule, (d) 10-30 wt% of styrene, (e) 10-30 wt% of acrylonitrile and (f) 0-10 wt% of an unsaturated monomer which is polymerizable with these monomers, and the polymer having a glass transition temperature of 0-30°C. There are also provided surface-treated metal materials obtained using the treatment agent and a process for their production.



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