

ABSTRACT

ORGANICALLY MODIFIED SILICA AND USE THEREOF

Organosilane-modified nanoparticles of silica, having a particle size of no more than 1 micron, in which the organosilane resides throughout the entire volume of the nanoparticles and not just at the surfaces of the nanoparticle. The nanoparticles may be in a colloidal solution. They may be prepared by hydrolyzing an alkali silicate under acidic conditions to obtain a silicic acid dispersion, followed by adding an organosilane having hydroxyl and/or hydrolyzable groups to the dispersion under acid conditions; and then raising the pH of the dispersion to at least eight to form the nanoparticles. They may be used in an effective paint primer/protective coating formulation.

(no figure)