

ABSTRACT

DISPERSION OF RUTILE TITANIUM OXIDE PARTICLES, METHOD FOR PRODUCING SAME AND USE OF SAME

The invention provides a dispersion of particles of rutile titanium oxide wherein the particles of rutile titanium oxide have a D50 in a range of 1 to 15 nm and a D90 of 40 nm or less in particle size distribution as determined by a dynamic light scattering method; a specific surface area in a range of 120 to 180 m²/g as determined by a BET method; and a rate of weight loss of 5% or less as obtained by heating the particles of rutile titanium oxide from 105°C to 900°C.

Such a dispersion of particles of rutile titanium oxide is obtained by a process according to the invention, which comprises: a first step in which an aqueous titanium tetrachloride solution is heated and hydrolyzed to obtain a slurry containing the precipitated particles of rutile titanium oxide; a second step in which the slurry obtained in the first step is filtered and washed with water to remove water-soluble salts dissolved therein from the slurry; a third step in which the slurry obtained in the second step is subjected to a hydrothermal reaction in the presence of an organic acid; a fourth step in which the slurry obtained in the third step is filtered and washed with water; a fifth step in which an acid is added to the slurry obtained in the fourth step, and the resulting mixture is subjected to a wet dispersion treatment, thereby obtaining a dispersion; and a sixth step in which excess acid and water-soluble salts are removed from the dispersion obtained in the fifth step.

FIG 1