(2) Analysis of Scanning Electron Micrograph Showing Irregularly Shaped Silica-Based Fine Particles

(2-1) Average Degree of Shape Irregularity

The average degree of shape irregularity was determined through analysis of a scanning electron micrograph. Specifically, a scanning electron micrograph was observed to determine a minimum circumscribed rectangle having the minimum area among circumscribed rectangles circumscribing respective 100 or more particles randomly selected. Lengths of a longer side and a shorter side of the minimum circumscribed rectangle were determined to define a ratio of the longer side to the shorter side ([longer side] / [shorter side]) as the degree of shape irregularity. The degrees of shape irregularity of the respective particles were calculated to determine an average value thereof as the average degree of shape irregularity.

(2-2) Average Particle Size of Area-Equivalent Circle

The average particle size of an area-equivalent circle was obtained by observing a scanning electron micrograph. A projected area of each of 100 or more particles randomly selected was obtained, and a diameter of a circle having an area equivalent to the projected area was used as the particle size of each of the particles.

(2-3) Average Degree of Shape Irregularity [A] and Average Degree of Shape Irregularity [B] in Particle Groups, and [B]/[A] Value

A scanning electron micrograph was analyzed to determine a particle size distribution for 100 or more particles randomly selected. Note that the particle size here means an average particle size of the area-equivalent circles. In this particle size distribution, an average degree of shape irregularity [A] of particles in a range where the ratio of the number of the particles counting from the side on which the particle size is small ([the number of particles counting from the side on which the particle size is small] / [the total number of particles]) was more than 0 and 1/10 or less was determined, an average degree of shape irregularity [B] of particles in a range where the ratio of the number of the particles counting from the side on which the particle size is small ([the number of particles counting from the side on which the particle size is small] / [the total number of particles]) was more than 9/10 and 10/10 or less was determined, and a [B]/[A] value was calculated.

(2-4) Irregularly Shaped Particle Ratio