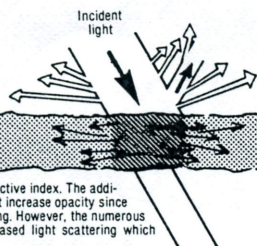
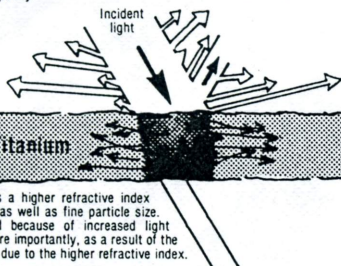


Fibers have a different refractive index than does air and, therefore, bend the light. Because of the many reflective surfaces (fibers) through the sheet, the reflected light is scattered.



Clay and fiber have the same refractive index. The addition of clay filler, of itself does not increase opacity since there is no increase in light bending. However, the numerous fine clay particles produce increased light scattering which results in improved opacity.



Titanium dioxide has a higher refractive index than clay and fiber, as well as fine particle size. Opacity is improved because of increased light scatter; but, even more importantly, as a result of the greater light bending due to the higher refractive index.

How refraction of light effects brightness of paper.