Suspension Encyclopedia Article

Suspension

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Contents

Suspension Encyclopedia Article.....1

Contents.....2

Suspension.....3

Suspension

Suspensions are heterogeneous mixtures consisting of insoluble particulate **matter** distributed throughout a continuous medium. Dispersed material may range in size from particles of atomic and molecular dimensions to particles whose size is measured in millimeters. Generally, dispersed systems are classified on the basis of the mean particle diameter of the dispersed material. The dispersion is called a suspension if the particle is greater than 0.5 micrometers. Molecular dispersions have particle sizes less than 1.0 nanometer. Colloidal dispersions have particle sizes in the 1.0 nanometer to 0.50 micrometer range. Colloidal dispersions are sometimes referred to as colloidal suspensions.

Suspensions are encountered in the pharmaceutical industry, and are the end product of many industrial preparations involving paints, printing **inks**, **cosmetics**, agricultural and food products, and dyestuffs. Suspensions often experience gravitational settling and flocculation. The dispersed particles are generally visible under an ordinary light microscope. If the dispersion is of sufficiently low **viscosity** the particles can be observed to exhibit Brownian movement. The particles do not pass through normal filter **paper** nor do they dialyze through a semipermeable membrane. An example of a suspension would be the temporary dispersion that would result by mixing grains of loose sand or finely divided clay particles with **water**. The dispersed particles do not remain suspended indefinitely but eventually settle to the bottom of the container because of the gravitational pull.