



Particle Size Analysis

Name: _____

Things to Remember

The mineral part of soil is separated into different-size fractions (sand at sizes 0.05-2.00 mm, silt at sizes 0.002-0.05 mm, and clay at sizes less than 0.002 mm). The proportions of these fractions are determined by the sedimentation principle based on Stokes' Law, which relates the radius of the particles to the velocity of sedimentation.

Materials

1. 1000 mL glass graduated cylinder.
2. Calgon solution (100 g/L). The dispersing agent Calgon consists of sodium hexametaphosphate with sufficient Na_2CO_3 to give a pH of 8.3 in a solution containing 100 g of the dissolved constituents, dissolved and diluted to 1 L.
3. 1000 mL beaker

Procedure

1. Transfer 50 g fine-textured air-dried soil to a 500 mL beaker.
2. Add water to make up volume to about 400 mL.
3. Add 50 mL Calgon solution and stir vigorously for 15 minutes.
4. Transfer soil suspension quantitatively to the (sedimentation) graduated cylinder.
5. Add water to make up to 1 L mark on the graduated cylinder.

6. Cover the graduated cylinder with a watch glass and let it stand overnight to equilibrate to room temperature on a vibration-free bench.