

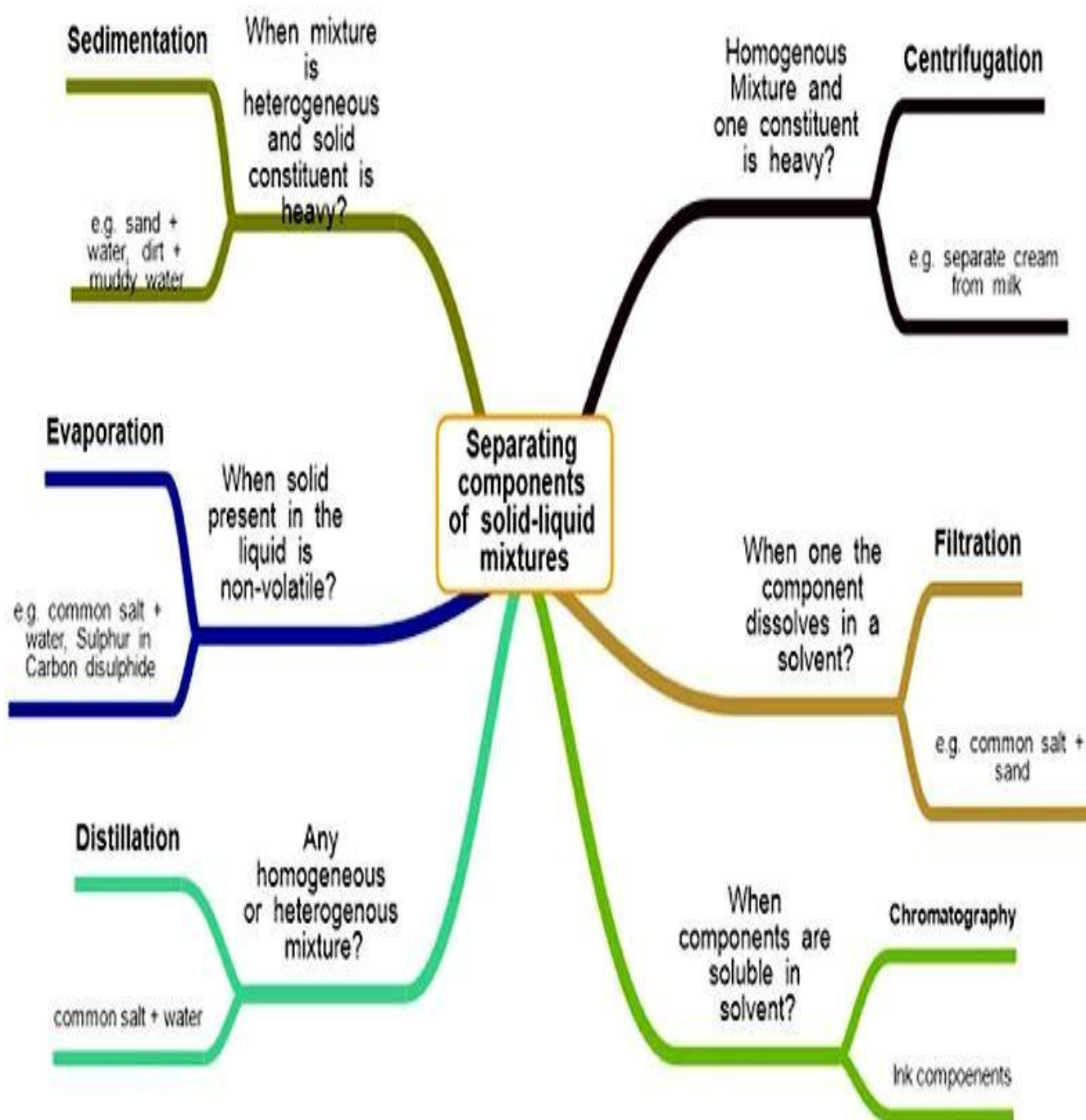
Chemistry Study Materials for Class 9 (NCERT Based notes of Chapter -02)

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Date:- 19/05/2021

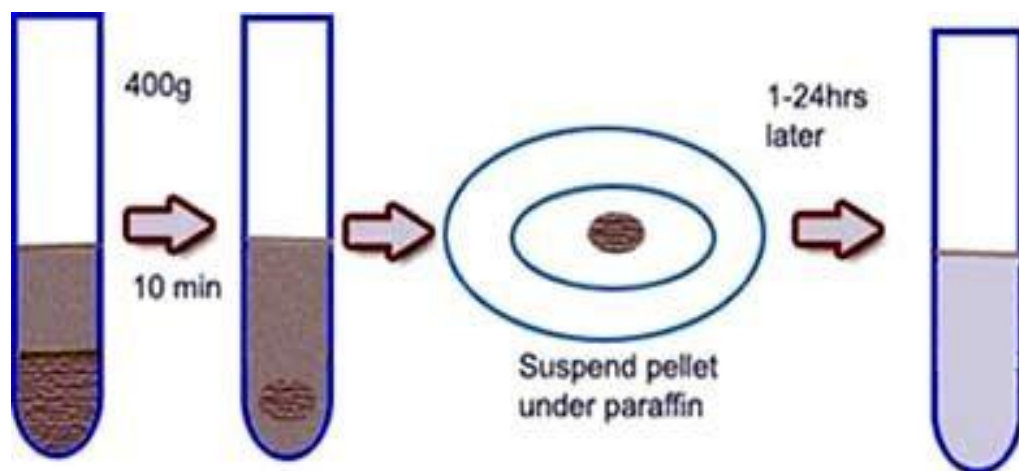
IS MATTER AROUND US PURE

DIFFERENT WAYS TO SEPARATE SOLID-LIQUID MIXTURES



SEDIMENTATION METHOD

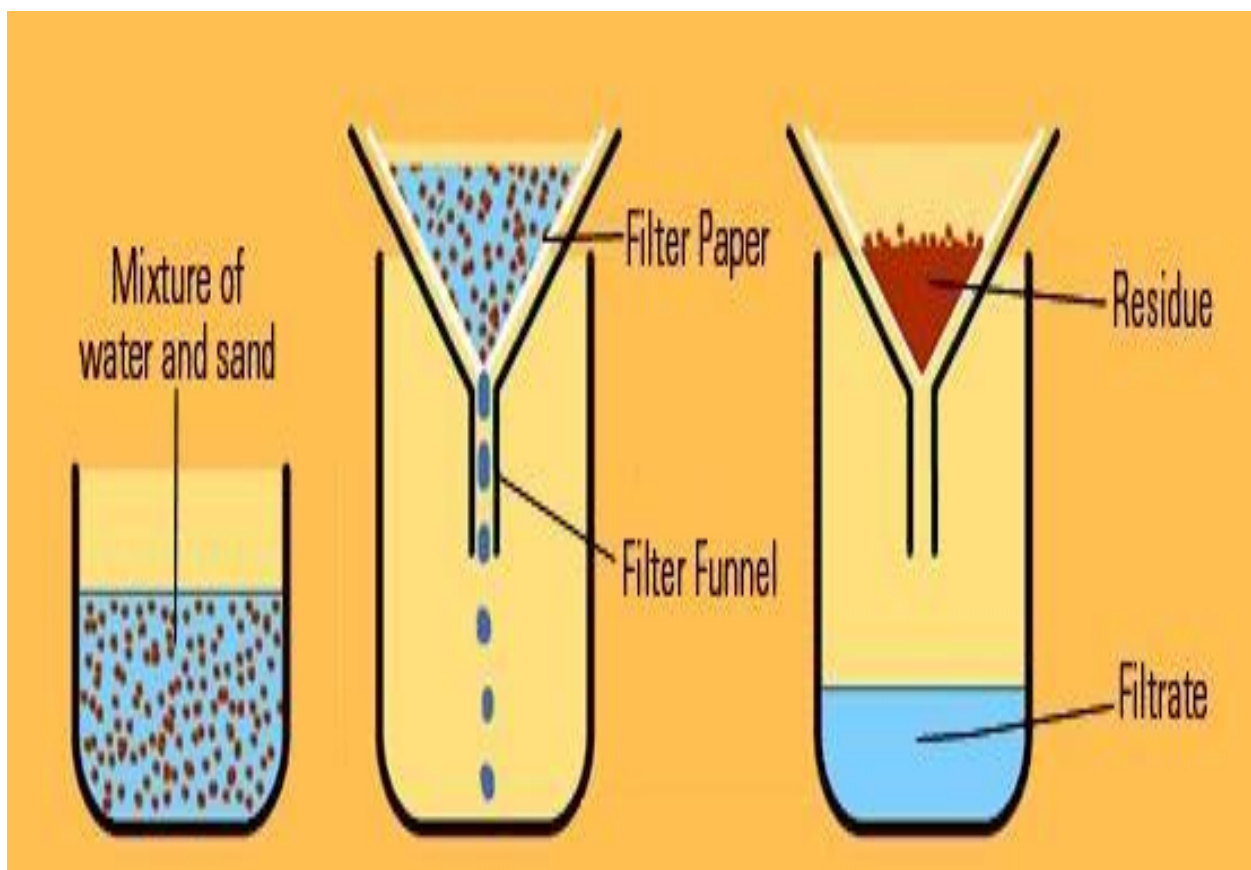
Sedimentation is the tendency for particles in suspension to settle out of the fluid in which they are entrained and come to rest against a barrier. This is due to their motion through the fluid in response to the forces acting on them: these forces can be due to gravity, centrifugal acceleration, or electromagnetism. In geology, sedimentation is often used as the opposite of erosion, i.e., the terminal end of sediment transport. In that sense, it includes the termination of transport by saltation or true bed load transport. Settling is the falling of suspended particles through the liquid, whereas sedimentation is the termination of the settling process.



FILTRATION METHOD

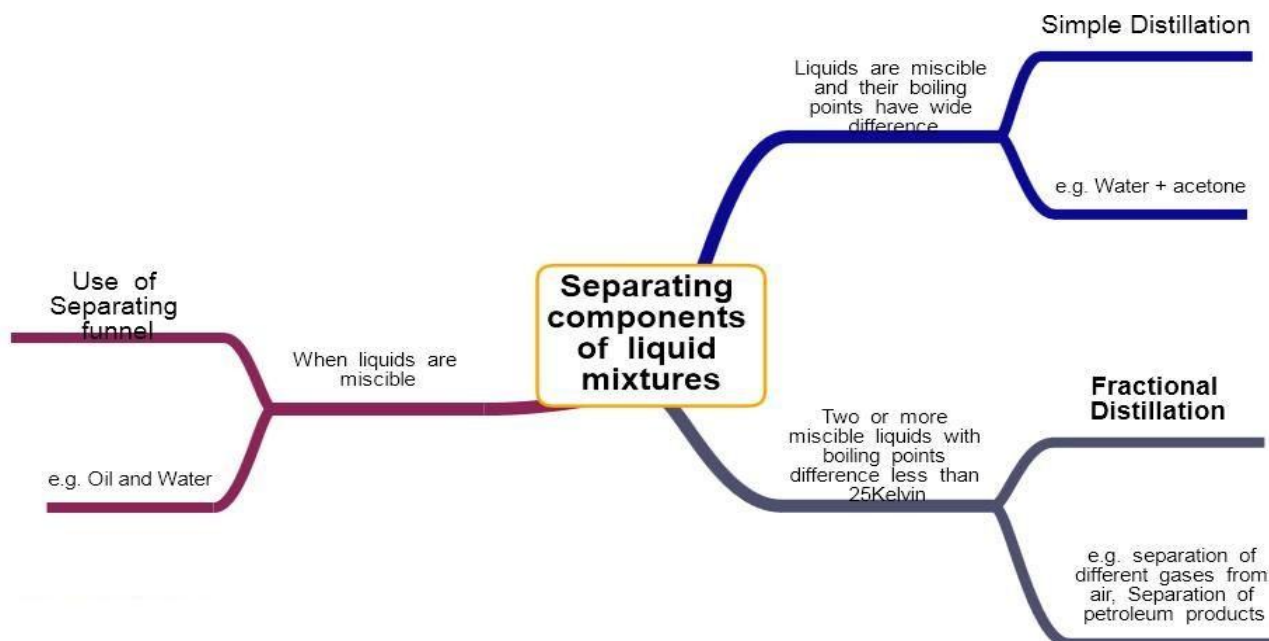
This is a more common method of separating an insoluble solid from a liquid. An example of such a mixture is sand and water. Filtration is used in water treatment plants, where water from the river is filtered to remove solid particles.

Here is a basic lab setup for filtration:



This process involves the use of a filter paper placed in a filter funnel. The funnel is placed in a beaker and the mixture of water and sand is poured into the funnel. The liquid part drains through the filter paper into the beaker, leaving the solid sand particles trapped on the filter. In filtration, the liquid part collected is called the filtrate and the solid bit that remained on the filter paper is called the residue.

DIFFERENT WAYS TO SEPARATE LIQUID-LIQUID MIXTURES



- Fractional distillation is the process of separating two or more miscible liquids by a modified distillation process, in which the distillates are collected as fractions having different boiling points. The separation of the liquids by this method is based on the difference in their boiling points.
- Fractional distillation makes use of a fractionating column or distillation column, a tube which provides different temperature zones inside it during distillation, the temperature decreasing from bottom to top. It provides surfaces on which condensations (of less volatile liquids) and vaporizations (of more volatile liquids) can occur before the vapours enter the condenser in order to concentrate the more volatile liquid in the first fractions and the less volatile components in the later fractions.
- Fractional distillation is very effective in separating mixtures of volatile components, and is widely used in laboratories and industries.
