

Seperating mixtures essay



**ASSIGN
BUSTER**

Through chemistry, the study of what objects are made out of, we use different methods for finding out things we do not know. Most materials in our world are mixtures. Very few materials are pure substances. The art of separating mixtures is important because it enables us to isolate pure substances. Mixtures are either homogeneous or heterogeneous. To separate a mixture there is not only one, but several different methods used. A mixture is a physical blend of two or more substances.

An important characteristic of mixtures is that their composition may change. There are two types of mixtures however, Homogeneous and Heterogeneous. Heterogeneous mixture is one that is not uniform in composition. Meaning that the chemical make up of the mixture is not the same. A Homogeneous mixture is one that is completely uniform in composition, meaning that the whole chemical makeup is the same. Solutions may be gases solids or liquids. Some mixtures can be separated into their components by simple physical methods.

One method is called distillation. A liquid is boiled to produce a vapor that is condensed again to a liquid. Using this method lets say for instance you have kool aid already mixed. If you choose to boil it the water will evaporate leaving the tiny particles or sugar left behind where you can see how and what is in it to be mixed. Decanting is the simplest possible way of separating a liquid, pure or a solution, from an insoluble solid, which has a density greater than water.

The solid-liquid mixture is allowed to stand, until all the solid settles out to the bottom of the container. Then the liquid is carefully poured off to leave

the insoluble solid behind. However it is inefficient because a small amount of liquid is always left in the solid residue and very fine solid particles take some time to settle out and any disturbance of the liquid can mix them in with the liquid being poured off. Chromatography is used to separate mixtures of substances into their components. All forms of chromatography work with the same principle.

They all have a stationary phase, a solid, or a liquid supported on a solid, and a mobile phase, a liquid or a gas. The mobile phase flows through the stationary phase and carries the components of the mixture with it. Different components travel at different rates. In paper chromatography, the stationary phase is a very uniform absorbent paper. The mobile phase is a suitable liquid solvent or mixture of solvents. The dyes travel up the chromatography paper at different distances before they cannot remain in solution. The more soluble dyes move further up than the less soluble ones, hence separating from each other. Distillation, paper chromatography, and decanting are only three of the many methods chemists use to separate mixtures. Other methods include filtration, sedimentation, and more.

Chemists need to use these procedures for analysis, because it is necessary to separate a mixture into its component, compounds, or elements. Then each component can be analyzed and identified for further research or conclusions.