centre de développement pédagogique
pour la formation générale en science et technologie



THEORETICAL AND PRATICAL CAPSULE

(This document is intended for adults.)



Lemonade

Mixtures

August 2009

Image drawn from the RÉCIT national service for preschool education

Objective

The objective of this capsule is to give the teaching personnel the opportunity to acquire a quick and correct comprehension of what mixtures are.

What is a mixture?

MIXTURE: *Mix of two or several substances (solvent and solute).*

SOLVENT: *The substance into which something can be dissolved.*

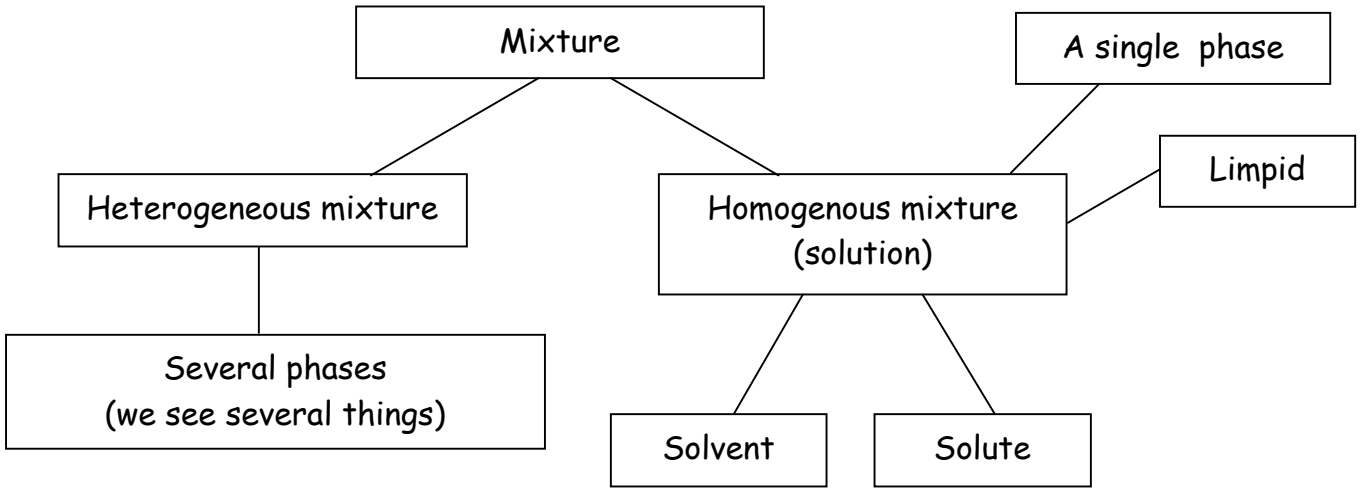
SOLUTE: *The substance that dissolves into the solvent.*

SOLUTION: *Result of the mixture of the solvent and solute.*

What are the two types of mixtures?

HOMOGENOUS MIXTURE: *in this type of mixture, we can not distinguish between the different substances. This type of mixture is a solution that contains a solvent and a solute.*

HETEROGENEOUS MIXTURE: *the different substances can be distinguished from one another (sometimes a microscope is required to find them.)*



What is dissolution?



DISSOLUTION: Action of certain substances that decompose into smaller particles throughout liquid particles. (The most commonly used solvent is water but there are other liquid substances like alcohol.)

We could also define dissolution in this way. It is the action of making a solid substance become a solute, for example to dissolve sugar into water. The sugar (a solid) is dissolved. It becomes a solute in the solvent that is the water. The resulting mixture is homogenous.

There is a limit to the quantity of solute that can be dissolved. Once this limit is reached, the mixture is said to be saturated. If we continue to add the solid substance, it will no longer dissolve and it will be said to be over saturated.

If the solvent is evaporated, the dissolved solid comes back (not necessarily in the same form as the original). For example when we evaporate salt water, the salt will deposit.

What is the difference between soluble and non soluble substances?

SOLUBLE: A substance that can be dissolved in a liquid. *Product that becomes invisible to the naked eye in a liquid.*

NON SOLUBLE: Substance that can not be dissolved in a liquid.



COLLECTIVE DEMONSTRATION TO ILLUSTRATE DISSOLUTION

Ask the students to stand very close together and hold the hands of two others so that the group forms a single particle of salt (solute). The teacher becomes the solvent (water) that passes through the group of children to break the hands that are held. The children are still there, but are no longer attached together. On the other hand, they are still present in the mixture.

For different activities relating to mixtures (all sites in French only)

La main à la pâte : Mélanges et solutions
http://www.lamap.fr/?Page_Id=6&Element_Id=64

La matière « Mélanges et solutions »
http://www-peda.ac-martinique.fr/ien/mrouge/m%E9langes%20et%20solutions.pdf

Mélanges? Solutions? Quelques rappels pour le maître
http://crdp.ac-dijon.fr/librairie/bonnes_feuilles/210b5180.pdf