

LECTURE # 6 : MAKING SOLUTIONS: SOLUTES AND SOLVENTS

When you mix two substances and they form a solution, you say that one substance dissolves in the other substances.

Solutions have 2 parts:

Solute – the substance that dissolves (found in less amounts)

Solvent – the substance in which the solute dissolves (found in the greatest amounts)

Dissolving – to mix completely: the solute dissolves into the solvent

Different States of Solutes and Solvents (Examples)

Solutions	Solutes	Solvent	State (solute)	State (solvent)
Air	Oxygen, carbon dioxide	nitrogen	Gas	Gas
Soda water	Carbon dioxide	Water	Gas	Liquid
Vinegar	Acetic acid	Water	Liquid	Liquid
Filtered ocean water	Sodium chloride	Water	Solid	Liquid
Brass	Zinc	Copper	Solid	Solid
antifreeze	alcohol	Water	Liquid	Liquid

Properties of Solutions

Homogeneous. It is a mixture of one phase only. The components are well mixed that all parts of solution appear the same. Solutions have the same composition and properties throughout.

- The solute cannot be separated from solvent through filtration
- A solution is often clear and transparent.

Soluble

- If the particles of the solute are more attracted to the particles of the solvent.
- Dissolving occurs.
- The solute is said to be soluble in that solvent (i.e. Solution)

Insoluble

- If the particles of the solute are more attracted to their own particles than the solvent particles.
- Dissolving does NOT occur.
- The solute is said to be insoluble in that solvent (i.e. Mechanical)