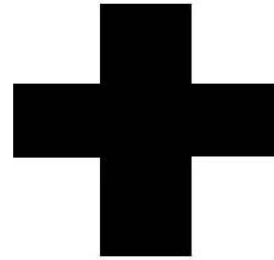


Do Now:

- If you stir 2 tablespoons of Iced-Tea Mix into a 16oz. glass of water, you would make a delicious summer drink. If you let the glass sit out on the counter for several days, would that drink be separated into its parts?

Solutions, Suspensions, and Colloids



It's all about the particles!

- The **size of the particles** has a great effect on the properties of a mixture.
- You must observe a mixture's properties before deciding whether it is heterogeneous or homogeneous.
- Mixtures get classified as solutions, suspensions, or colloids based on particle size.

Solutions



Q: When iced-tea mix is dissolved in water, it forms what kind of mixture?

A: **HOMOGENEOUS MIXTURE**

When substances dissolve and form a homogeneous mixture, the mixture is called a **solution**. Whatever substance there is more of is called the **solvent**. The other is called the **solute** (ex. Iced tea-the solvent is the water, the solute is the tea mix).

Properties of a Solution

- They do not separate into layers over time.
- If they are poured through a filter, none of the substances will get trapped.
- Light passes through them.

All of the particles in a solution are too small to become separated, filter out, or scatter light.

Suspensions



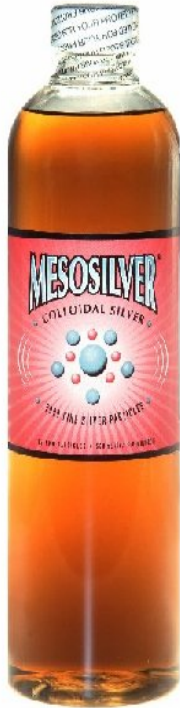
- Flour in water, like other liquids that need to be “shaken well before using”, are called **suspensions**.
- Muddy water taken from a swamp is another example.

Properties of a Suspension

- Heterogeneous mixture
- Separates into layers over time.
- Filters can separate particles that make up a suspension.
- Particles are larger than those in a solution.
- Scatter light. (This is known as the Tyndell Effect)

Suspended particles settle out of a suspension.

Colloids



Colloids contain some particles that are **intermediate** between those in a solution and those in a suspension. Examples include peanut butter, pudding, Jello, whipped cream, and even fog!

Properties of Colloids

- Do not separate into layers.
- Particles will not become trapped by a filter.
- Scatter light.

Colloids and suspensions appear cloudy; unlike solutions which are much clearer.

Colloids and solutions will not separate into layers; suspensions will.

Examples of Colloids

Dispersed Phase	Dispersing Medium		
	Gas	Liquid	Solid
	Gas		shaving cream, whipped cream
Liquid	fogs, clouds, aerosol can spray	mayonnaise, milk, face cream, hair gel	jelly, cheese, butter
Solid	smoke, car exhaust, airborne viruses	Gold in water, milk of magnesia, river silt	alloys of metals (steel, brass)