

Solutions

Name _____

Watch the video assigned by your teacher.

<https://www.youtube.com/watch?v=8jltsQvnpf0> Until minute 1:57min

Read following information.

Types of Solutions

Solutions are mixtures in which a solute is dissolved in a solvent.

What is a solution?

A solution is a homogeneous mixture where a solute is evenly distributed in a solvent.

Components of a solution

Solvent

The substance that dissolves the solute (usually the largest amount).



Solute

The substance that dissolves (in a smaller amount).

Unsaturated Solution

Contains less dissolved solute than the maximum amount possible at a given temperature.



- ✓ More solute can still dissolve.
- ✓ The solution is clear.
- ✓ Common at lower temperatures.

Example: 1 spoon of sugar in a glass of water.

Saturated Solution

Contains the maximum amount of dissolved solute at a given temperature.



- ✓ No more solute can dissolve (at that temperature).
- ✓ Some solute may remain undissolved.
- ✓ The solution is clear (until the excess is visible).

Example: Salt water with some salt at the bottom.

Supersaturated Solution

Contains more dissolved solute than is normally stable at a given temperature.



- ✓ Unstable (the extra solute can crystallize easily).
- ✓ Often formed by cooling a hot saturated solution.
- ✓ Looks clear, but can quickly form crystals.

Example: Hot sugar water cooled slowly.

Quick Comparison

Feature	Unsaturated	Saturated	Supersaturated
Amount of solute	Less than maximum	Maximum	More than maximum
Can more solute dissolve?	Yes	No	Usually no (unstable)
Appearance	Clear	Clear (or with undissolved solute)	Clear (may form crystals if disturbed)
Stability	Stable	Stable	Unstable



Solution • Solute • Solvent • Dissolve • Solubility • Temperature

Remember!



- A solution is a mixture.
- The solvent dissolves, the solute is dissolved.
- Temperature can affect how much solute dissolves.
- Supersaturated solutions are unstable and can form crystals with a small change.

Same elements...
different amounts!

Answer the following questions using complete sentences.

1.What is a solution?

2.What are the two main components of a solution?

a. _____ b. _____

3.What is the difference between a solute and a solvent?

4.Give two examples of solutions you can find in everyday life.

a. _____ b. _____

5.Read each situation and identify the type of solution. Write *unsaturated*, *saturated*, or *supersaturated*.

a. Ana adds a small amount of sugar to a glass of water. All the sugar dissolves, and more sugar could still dissolve. Type: _____

b. Pedro adds salt to water until no more salt dissolves under the same conditions. Some salt remains at the bottom. Type: _____

c. A hot sugar solution is prepared with a large amount of dissolved sugar. It is cooled carefully, and the extra sugar remains dissolved. A small disturbance may cause crystals to form. Type: _____

6. Identify If the pictures is saturated, unsaturated and supersaturated.


