

## Types of Solutions

**Solution:** → Homogenous mixture of two or more substances.

- ❖ There are six types of solutions depending on the original states "solid, liquid or gas" of the solution components.

### Types of solutions

Component 1	Component 2	State of resulting solution	Examples
gas	gas	gas	→air
gas	liquid	liquid	→Soda water
gas	solid	solid	→H <sub>2</sub> gas in palladium
liquid	liquid	liquid	→Ethanol in H <sub>2</sub> O
solid	liquid	liquid	→NaCl in H <sub>2</sub> O
solid	solid	solid	→Brass (Cu/Zn) Solder (Sn/Pb)

- ☒ The liquid solvent in most of solutions we will study is **water**.
- ☒ Chemists characterize the solutions by their capacity to dissolve solute.

## Characterization of solutions

1) **Saturated Solutions**: → contain maximum amount of solute that will dissolve in a given solvent at specific temp.

2) **Unsaturated solutions**: → contain less solute than it has the capacity to dissolve.

3) **Super saturated solutions**: → contains more solute than is present in a saturated solution.

- ✓ Super saturated solutions aren't very stable.
- ✓ Some of solute will come out of super saturated solutions as crystals.

**Crystallization** → Is a process in which dissolved solute comes out of solution and forms crystals.

**Choose**

1) There are.....type of solution depending on the original state "solid, liquid, gas".

- A) Four  
B) three  
C) six  
D) two

2) When the solute is gas and solvent is gas the result solution will be.....

- A) Solid  
B) gas  
C) liquid  
D) plasma

3) Brass (Cu/Zn) is example of ..... solution.

- A) Gas in liquid  
B) solid in solid  
C) solid in liquid  
D) gas in gas

4) The solution that contains more solute than is present in saturated solution.....

- A) Saturated solution  
B) super saturated-solution  
C) un saturated solution  
D)

5) Is a process in which dissolved solute comes out of solution and form crystals.....

- A) Solvation  
B) saturation  
C) Crystallization  
D) super saturation