

reSEARCH

Insoluble Substances

Sometimes a substance won't dissolve in a solvent. That substance is insoluble in that solvent. Find out why some substances are insoluble.

COMPARING SOLUBILITY OF COMMON SUBSTANCES

The solubility of a solute is the maximum amount of that solute that you can dissolve in a given amount of solvent at a given temperature. If you did the last Inquiry Activity, you noticed that different solutes have different solubilities. Solubility is a unique property for each substance. The table below shows the solubilities of some common substances in water at 0°C. You can see that 35.7 g of salt will dissolve in 100 mL of water at 0°C, and 180 g of sugar will dissolve in 100 mL of water at 0°C.

Solubility in g/100 mL of Water at 0°C	
Compound	Solubility (g)
salt	35.7
baking soda	6.9
carbon dioxide	0.35
sugar	180
hydrogen	0.00019
oxygen	0.007
ammonia	92

CHECK AND REFLECT

1. What is the difference between a diluted solution and a concentrated solution?
2. If a solution has a concentration of 75 g per 100 mL, what does this mean?
3. Calculate the concentrations in grams per 100 mL for the following solutions:
 - a) 10 g of chocolate in 50 mL of water
 - b) 3 g of sugar in 300 mL of water
 - c) 5 g of maple syrup in 25 mL of water
4. What is the difference between a saturated solution and an unsaturated solution?
5. What is the solute in a fruit punch drink?

