

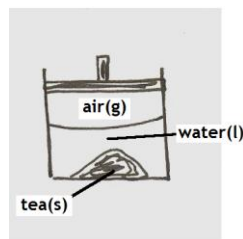
Aim: What factors affect solubility? Part 2

1) SOLIDS

Demo: More tea dissolves in hotter water.

A) Therefore, higher **temperature**, higher solubility of **solids**.

Demo: "Plunging down" on a tea/water mixture doesn't make more tea dissolve.



B) Changing the **pressure** has no effect on the solubility of solids.

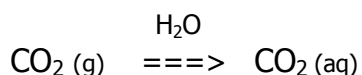
WHY? Solids are incompressible.

2) **LIQUIDS** – Liquids behave like solids, but the effect of temperature is smaller.

3) GASES

Demo: seltzer = carbonated water = CO_2 (aq)

When the bottle is capped you don't see bubbles because the CO_2 (g) is dissolved in the water. It's a homogeneous mixture (solution).

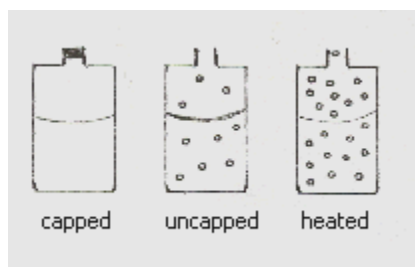


Demo: Bubbles appear *when a bottle of seltzer is uncapped.

*effervescence – the sudden appearance of a gas in a liquid.

NOTE: Bubbles that you see is gas that is NOT dissolved.

A) Therefore, lower **pressure**, lower solubility of gases.



Demo: When the seltzer is heated more bubbles appear.

B) Therefore, higher **temperature**, lower solubility of gases.

So, to make seltzer, you want HIGH pressure and LOW temperature.

(Finally, why do more bubbles appear after shaking the bottle? Turning over the liquid increases surface area, thereby, releasing more gas.)

In Summary,

	$S_{\text{solids \& liquids}}$	S_{gases}
\uparrow TEMPERATURE	\uparrow	\downarrow
\uparrow PRESSURE	no effect	\uparrow

