

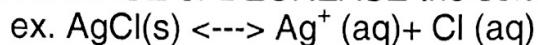
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Chemistry 12
Solubility Lesson #10

THE COMMON ION EFFECT and other ways to alter the solubility of a salt

What does it mean to INCREASE or DECREASE the solubility of a salt?



INCREASE SOLUBILITY, reaction shifts to favour the _____ .

DECREASE SOLUBILITY, reaction shifts to favour the _____ .

Recall LE CHATELIER'S PRINCIPLE; **changing the concentration of dissolved ions in the equilibrium will shift the equilibrium:**

A. DECREASING the solubility of a salt

If we _____ the concentration of one of the ions in solution, according to Le Chatelier the reaction will shift to the _____ .

ex i.

ex ii.

THIS PROCEDURE IS CALLED THE COMMON ION EFFECT!

The *common ion effect* is often used in chemistry to deliberately prevent a particular salt from dissolving to any great extent or to force a particular dissolved ion to leave a solution.

Example1: The solubility of Mg(OH)_2 is about 0.5 M at 25 °C.

State two ways to **DECREASE** the solubility of Mg(OH)_2 in water.

B. INCREASING the solubility of a salt

If we _____ the concentration of one of the ions in solution, according to Le Chatelier the reaction will shift to the _____.

ex i.

ex ii.

Example 2: In which solution would SrCl_2 be most soluble? In which solution would SrCl_2 be least soluble? Explain your answers

A) 1 M NaNO_3
B) 1 M Na_2SO_4

C) 1 M $\text{Sr}(\text{NO}_3)_2$
D) 1 M MgCl_2