

Lab: Determination of Solubility Product Constant

Name:

Block:

For Students:	For Teacher:
Lab performed:	Pre-lab completion: <input type="checkbox"/> Yes <input type="checkbox"/> No
Lab due:	Lab Submitted: <input type="checkbox"/> On Time <input type="checkbox"/> Late

Define:

- Saturated solution:

 - K_{sp} :

 - Solubility:
-

Calculations:

If 25.0 mL of 0.0250M $Sr(OH)_2$ and 40.0 mL of 0.0300M $Ca(NO_3)_2$ are mixed, will a precipitate form?
The K_{sp} of $Ca(OH)_2$ is 6.5×10^{-6} .

Objectives:

- 1.
- 2.
- 3.
- 4.

Procedure:

Experimental Results: (Pre-lab: Complete **grey** boxes from lab handout and complete calculations indicated below.)

Test Tube	A	B	C	D	E	F
Vol. of 0.010 M Pb(NO ₃) ₂ (mL)						
Vol. of water added (mL)						
Vol. of 0.020 M KI (mL)						
Vol. of water added (mL)						
Total Volume (mL) (V ₂)	20.0	20.0	20.0	20.0	20.0	20.0
New [Pb(NO₃)₂] **calculate before lab**						
New [KI] **calculate before lab**						
Precipitate or no precipitate at room temperature?						
Temperature at which precipitate dissolves (°C)						

Analysis of Results:

1. What are the formula equation, complete ionic equation and net ionic equation for the reaction in this experiment?
2. What is the K_{sp} expression for the precipitate formed in this experiment?
3. Calculate the value of the trial K_{sp} for each test tubes A to F.
4. Which test tubes had a precipitate at room temperature?
5. Which test tubes did not have a precipitate at room temperature?
6. What is the range of values in which your experimental K_{sp} must lie? Explain your answer.
7. What is the trend in the solubility as the temperature is increased? Explain your answer.
8. Compare your K_{sp} value range with that obtained from your data booklet. How does it compare?