

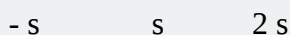
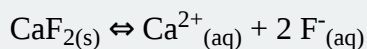
20.2 Finding the Solubility of a Salt (Video)

This project was preformed to supply **Libretext Authors** with videos on General Chemistry topics which can be used to enhance their projects. Also, these videos are meant to act as a learning resource for **all General Chemistry students**.

Video Topics

The K_{sp} expression can be used to find the molar solubility of a salt (s). From this, the concentration of the insoluble salt's ions in a saturated solution can be determined.

For a saturated solution of $\text{CaF}_{2(s)}$, find the molar solubility if $K_{sp} = 5.3 \times 10^{-9}$. Also, find $\{\text{Ca}^{2+}\}$ and $\{\text{F}^{-}\}$ at equilibrium.



$$K_{sp} = \{\text{Ca}^{2+}\}\{\text{F}^{-}\}^2 = \{s\}\{2s\}^2 = 4s^3$$

$$K_{sp} = 4s^3$$

$$s = (5.3 \times 10^{-9}/4)^{1/3} = \mathbf{1.1 \times 10^{-3} \text{ M}}$$

$$\{\text{Ca}^{2+}\} = s = \mathbf{1.1 \times 10^{-3} \text{ M}}$$

$$\{\text{F}^{-}\} = 2s = \mathbf{2.2 \times 10^{-3} \text{ M}}$$

This video contains examples of determining the solubility of a salt (s) if given the solubility product (K_{sp})

Link to Video

Finding the Solubility of a Salt: <https://youtu.be/98BuldrICXM>



Attribution

- Prof. Steven Farmer (Sonoma State University)

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