
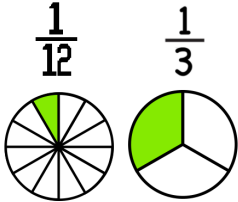


AP Chemistry Daily Videos

7.5 Magnitude of the Equilibrium Constant

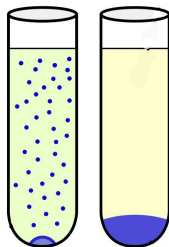
Video #1

1.

| Visual | Question | Answer |
|---|---|---|
|  | <p>What happens to the value of a fraction as the numerator gets larger?</p> | |
|  | <p>What happens to the value of a fraction as the denominator gets larger?</p> | |
| | <p>Remember that calculating K, products are in the numerator and reactants are in the denominator. What do you know if K is larger than 1? Draw a picture to the left to represent what happens when K is large.</p> | <p>Which side of the equation is favored?</p> |
| | <p>What do you know if K is less than one? Draw a picture to the left to represent what happens when K is small.</p> | <p>Which side of the equation is favored?</p> |
| | <p>What do you know if K=1? Draw a picture to the left to represent what happens when K=1.</p> | <p>Which side of the equation is favored?</p> |

2. K_{sp} is a specific equilibrium constant called the solubility product constant. What does it represent?

3. Label each image as either: Large K_{sp} or Small K_{sp}



II

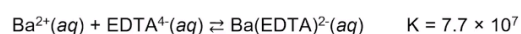
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II

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4. Evaluate how you did in example 1 and identify any errors.

5. Try to complete this problem before the answer is given. Evaluate how you did and identify any errors you made.



The polyatomic ion $\text{C}_{10}\text{H}_{12}\text{N}_2\text{O}_8^{4-}$ is commonly abbreviated as EDTA^{4-} . The ion can form complexes with metal ions in aqueous solutions. A complex of EDTA^{4-} with Ba^{2+} ions forms according to the equation above. A 50.0 mL volume of a solution that has an $\text{EDTA}^{4-}(\text{aq})$ concentration of 0.30 M is mixed with 50.0 mL of 0.20 M $\text{Ba}(\text{NO}_3)_2$ to produce 100.0 mL of solution.

Considering the value of K for the reaction, determine the concentration of $\text{Ba}(\text{EDTA})^{2-}(\text{aq})$ in the 100.0 mL of solution. Justify your answer.

6. What does it mean when an equilibrium reaction is said to go "essentially to completion"?

7. Summarize the four key takeaways.

a.

b.

c.

d.