

Acids & Bases Ws #7: Acid/Base Strength and Buffers

Acid/Base Strength (page 565- 568)

- Describe a strong acid in terms of
 - ionization of the acid
 - number of H⁺ ions produced
 - the strength of the conjugate base.
- Name four strong acids. For each acid, write the equation showing the acid dissociating in water.
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- Describe a weak acid in terms of
 - ionization of the acid
 - number of H⁺ ions produced
 - the strength of the conjugate base
- Give an example of a weak acid.

Buffers (page 585-586)

- What characteristic properties do buffered solutions possess?
- Why are buffered solutions vitally important to living organisms?
- What is the range of pH that must be maintained in the blood for a human to survive?
- What two components make up a buffered solution?
- Give an example of a combination that would serve as a buffered solution.
- What does a strong acid react with in a buffered solution? And, how does this prevent the pH from changing?
- What does a strong base react with in a buffered solution? And, how does this prevent the pH from changing?
- Which of the following combinations would act as a buffered solution:
HCl and NaCl or HC₂H₃O₂ and KC₂H₃O₂
- Explain why the combination that would not act as a buffer in the previous problem would not act as a buffer.
- A buffered solution can be made with lactic acid (HC₃H₅O₃) and sodium lactate (NaC₃H₅O₃). What is the common ion present in both the acid and the salt?
- Show what would happen if the strong acid, HCl is added to this buffered solution.
- Show what would happen if the strong base, NaOH is added to this buffered solution