

Buffers Worksheet

Definition of a buffer:

Fill in the following chart:

Acid	Conjugate Base	Salt
HCN	_____	_____
_____	_____	KHCO ₃
_____	NH ₃	_____
HF	_____	_____
_____	_____	NaCH ₃ COO
_____	HC ₂ O ₄ ⁻	_____

3. Write an equation for all the buffer systems above.

4. Which buffer could have a pH of 4.0? Which buffer could have a pH of 10.0?

a) HCl & NaCl b) HF & NaF c) NH₃ & NH₄Cl

5. Predict how the buffer of pH = 9.00 will change. Your answers are 9.00, 8.98, 9.01, 2.00, and 13.00

Final pH

a) 2 drops of 0.10 M HCl are added _____

b) 1 drop of 0.10 M NaOH is added _____

c) 10 mL of 0.10 M HCl are added _____

6. Write an equation for the carbonic acid, sodium carbonate buffer system. A few drops of HCl are added. Describe the shift and each concentration change.

Equation:

Shift _____ [H⁺] = _____ [H₂CO₃] = _____ [HCO₃⁻] = _____

7. On a titration curve, where is the buffer portion of the graph located and what is happening to cause this region?

8. What is the biological importance of the buffer in question 6? Why might Aspirin (Acetylsalicylic acid) kill you if your body did not have this buffer system?