

Understanding Acidic and Basic Conditions

I cannot overemphasize the importance of you having thorough understanding of acid-base concepts.

When you encounter a mechanism (or any reaction), you help your cause by determining if the reaction is happening under acidic or basic conditions because this plays a significant role in how you show the proton transfers in the mechanism. **Know your pK_a values, and know how to use them!!**

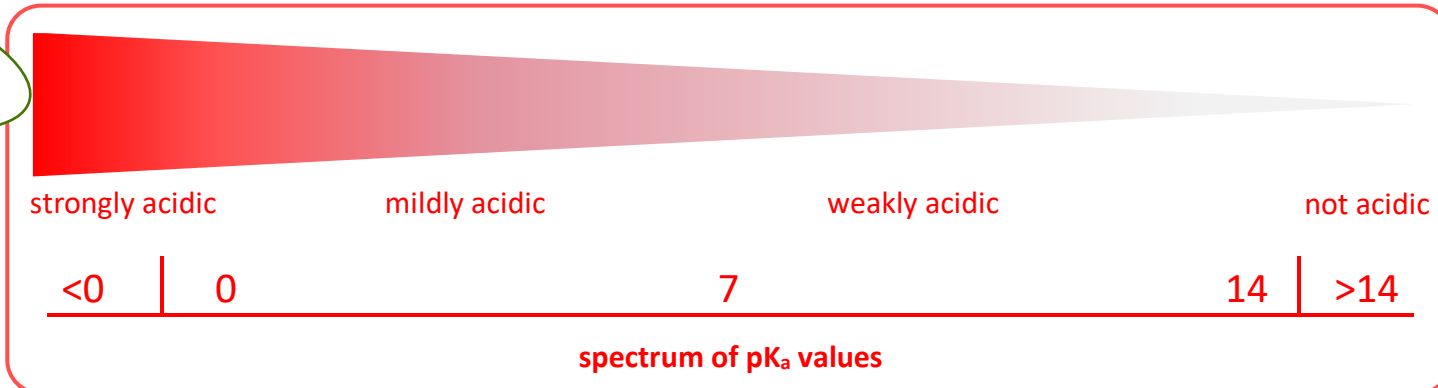
We also want the ability to determine if we have strongly acidic conditions or strongly basic conditions. Understand that strengths are on a spectrum. **Note that basicity is being measured by pK_{aH} value, NOT by pK_a value!!!** **NOTE:** The term pK_{aH} is a shorthand way of saying the pK_a of the conjugate acid.

OChem GOLD!



PLEASE LEARN THIS.

- If there is a compound present with a pK_a value less than 7, you have acidic conditions.
- If there is a compound present with a pK_{aH} value greater than 7, you have basic conditions.
- If neither of the above conditions exist, the system is neither acidic nor basic.



SUPER important understandings!!

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Weak bases have pK_{aH} values less than 0.

Strong bases have pK_{aH} values greater than 14.

