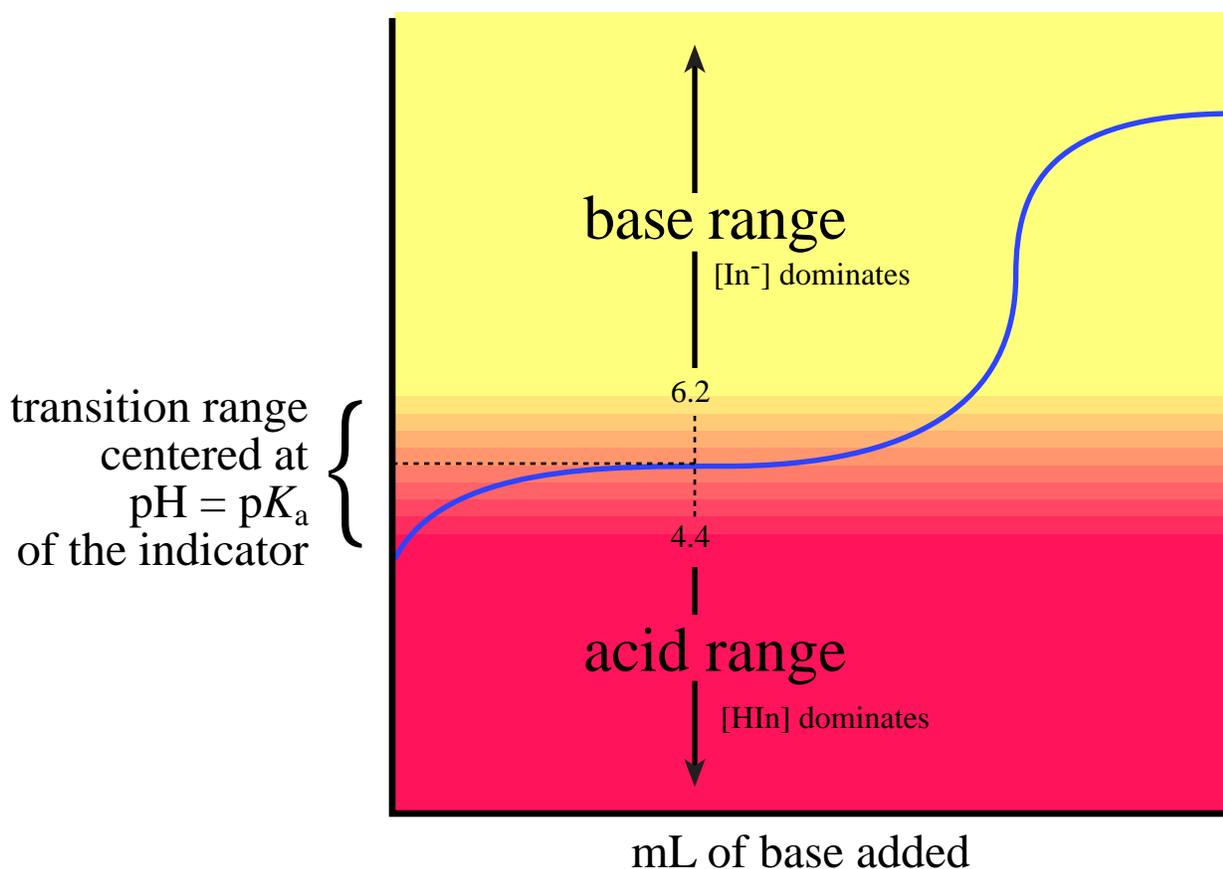


The titration of an Indicator (HIn)

If you actually titrate an indicator you will get a typical looking pH curve. However there will be a gradual color change throughout most of the titration (between the starting point and the end point). Right after the first addition of base the weak acid indicator will begin its color change. This change continues up till about 90% of the way to the end point at which point the color change will be complete. Also note that at the 1/2 way point (50% titrated) the indicator will be at the center of its color transition range.

Shown below is the transition for methyl red which goes from red (below pH = 4.4) through orange to yellow (above pH = 6.2).



By adding just a little* of the indicator to another titration you can WATCH and get visual feedback as to WHERE the pH is during a titration. For methyl red you'll see RED up to pH 4.4, a nice orange at around pH 5.3, and finally yellow beyond pH 6.2.

If your titration of interest has its equivalence point in that range, then methyl red would be a suitable indicator for that titration. There could also be other indicators that are suitable too.

* you must add enough to SEE the color, but not enough to affect the stoichiometry of the titration you are performing. Most indicators are so intensely colored that even in the 10⁻⁴ M range, they can easily be seen.