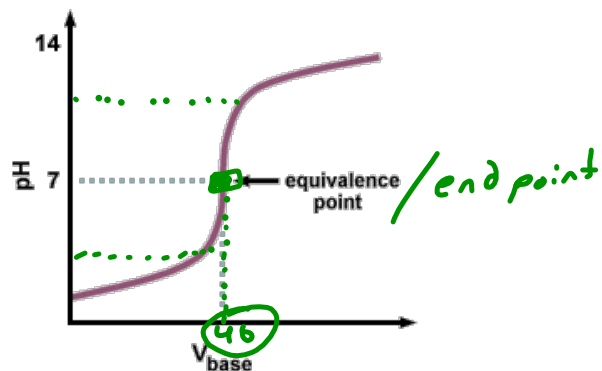


## Lesson 7: Acid/Base Titration and Curves

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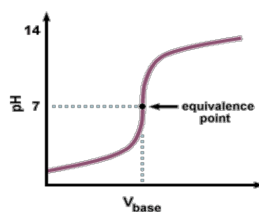
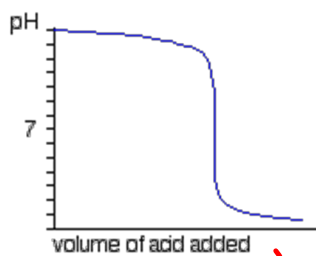
Acid-Base Titration – pg 333

- A titration done for a reaction between an acid and a base
- Endpoints are usually not noticeable but indicators can be used b/c they change color at a certain pH
- We must know what indicator to use in an acid-base titration
- To do this we use pH curves



## pH Curves – pgs 334-335

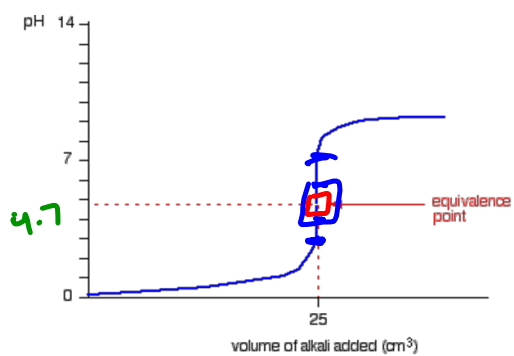
- A pH curve is a graph that shows the volume of titrant added (x-axis) vs. the pH change of the sample (y-axis)

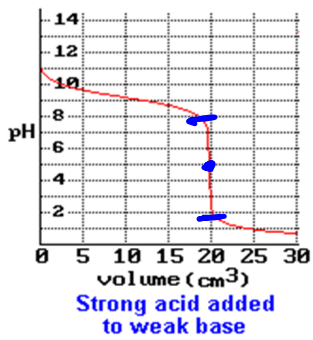


- The equivalence point is the point halfway up the vertical section on the graph. *endpoint*
- For a reaction between a strong acid and strong base, the equivalence point is always at a pH of 7.

Using pH curves to choose an indicator for a titration – pg 336

- To choose an appropriate indicator for a titration:
  - Determine the equivalence point for the curve
  - Determine the pH at the equivalence point
  - Find an indicator whose range of color change includes the pH at the equivalence point





Volume of <sup>acid</sup>~~base~~ added at equivalence point

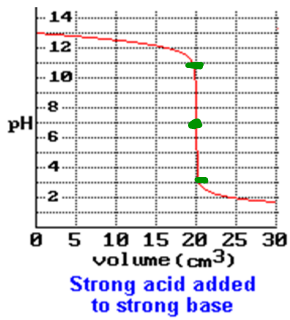
20 cm<sup>3</sup>

pH at equivalence point

5

Indicator for titration

methyl red or bromocresol green



Volume of <sup>acid</sup>~~base~~ added at equivalence point

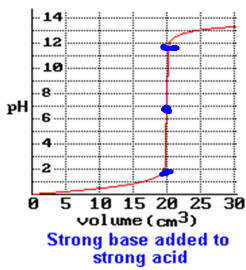
20 cm<sup>3</sup>

pH at equivalence point

7

Indicator for titration

bromothymol blue  
or  
phenol red



Volume of base added at equivalence point

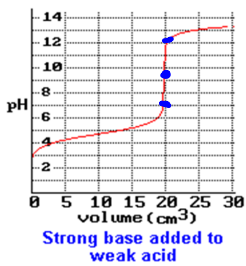
20 cm<sup>3</sup>

pH at equivalence point

7

Indicator for titration

phenol red or bromothymol blue



Volume of base added at equivalence point

20 cm<sup>3</sup>

pH at equivalence point

9.5

Indicator for titration

phenolphthalein or thymolphthalein