The acid–base titration can be examined by tracking the change in pH with an acid–base titration curve, a plot of pH versus volume of titrant added.Strong Acid?Weak Base Titrations Consider the titration of HCl, a strong acid, with NH3, a weak base: H+(aq) + NH3(aq) –> NH4+(aq) The pH at the equivalence point is less than 7 due to the hydrolysis of the NH4+: NH4+(aq)?NH3(aq)+H+(aq) Because of the volatility of an aqueous ammonia solution, it is more convenient to add hydrochloric acid from a burette to the ammonia solution.In a strong acid–strong base titration, both the hydrogen ion and hydroxide ion concentrations are very small at the equivalence point (approximately 1?10?14M); consequently, the addition of a single drop of the base can cause a large increase in [OH?] and in the pH of the solution.HC2H3O2(aq) + OH?(aq) Therefore, at the equivalence point, when we only have sodium acetate present, the pH will be greater than 7 as a result of the excess OH– ions formed.(aq) –> H2O (l) Consider the addition of 0.10 M NaOH solution (from a burette) to a conical flask containing 25 mL of 0.10 M HCl.Near the equivalence point the pH begins to rise steeply, and at the equivalence point (that is, the point at which equimolar amounts of acid and base have reacted) the curve rises almost vertically.Strong Acid?Strong Base Titrations The reaction between HCl, a strong acid, and NaOH, a strong base, can be represented, in terms of the net ionic equation, by H+(aq) + OH?Weak Acid?Strong Base Titrations Consider the neutralization reaction between acetic acid (a weak acid) and NaOH (a strong base): HC2H3O2(aq) + OH?(aq) –> C2H3O2?(aq) + H2O (l)?

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