

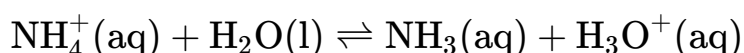
Acid-Base Titration Equivalence Point

<https://gemini.google.com/app/f2693f5a43daa308>

Response: **Statement 1 Evaluation** When a strong acid (e.g., HCl) is titrated with aqueous ammonia (NH_3), ammonium ions (NH_4^+) and the conjugate base of the strong acid (e.g., Cl^-) are present at the equivalence point. Because NH_4^+ hydrolyzes in water to produce hydronium ions (H_3O^+), the resulting solution is acidic ($\text{pH} < 7$), not neutral.

- **Statement 1 is True.**

Statement 2 Evaluation The ammonium ion acts as a weak Brønsted-Lowry acid in aqueous solution, undergoing hydrolysis according to the equilibrium reaction:



This reaction directly forms H_3O^+ , making the solution acidic.

- **Statement 2 is True.**

Both statements are **true**, and Statement 2 is the **correct explanation** for Statement 1.
