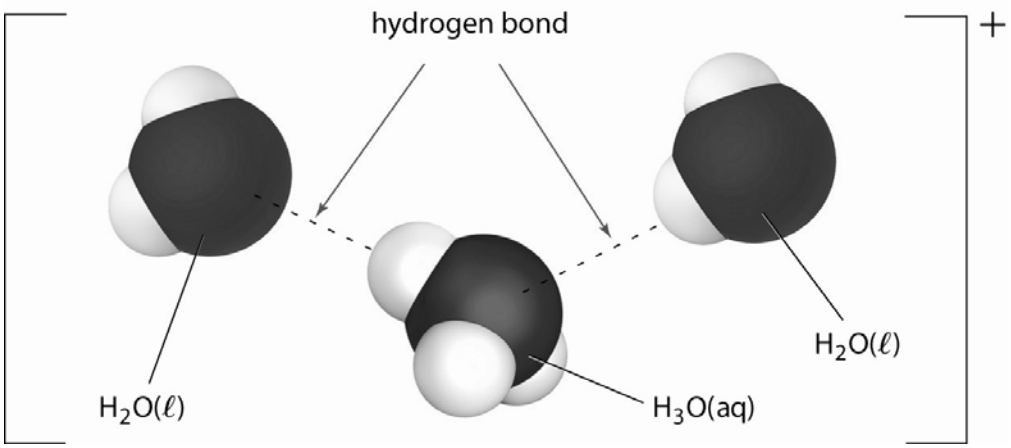
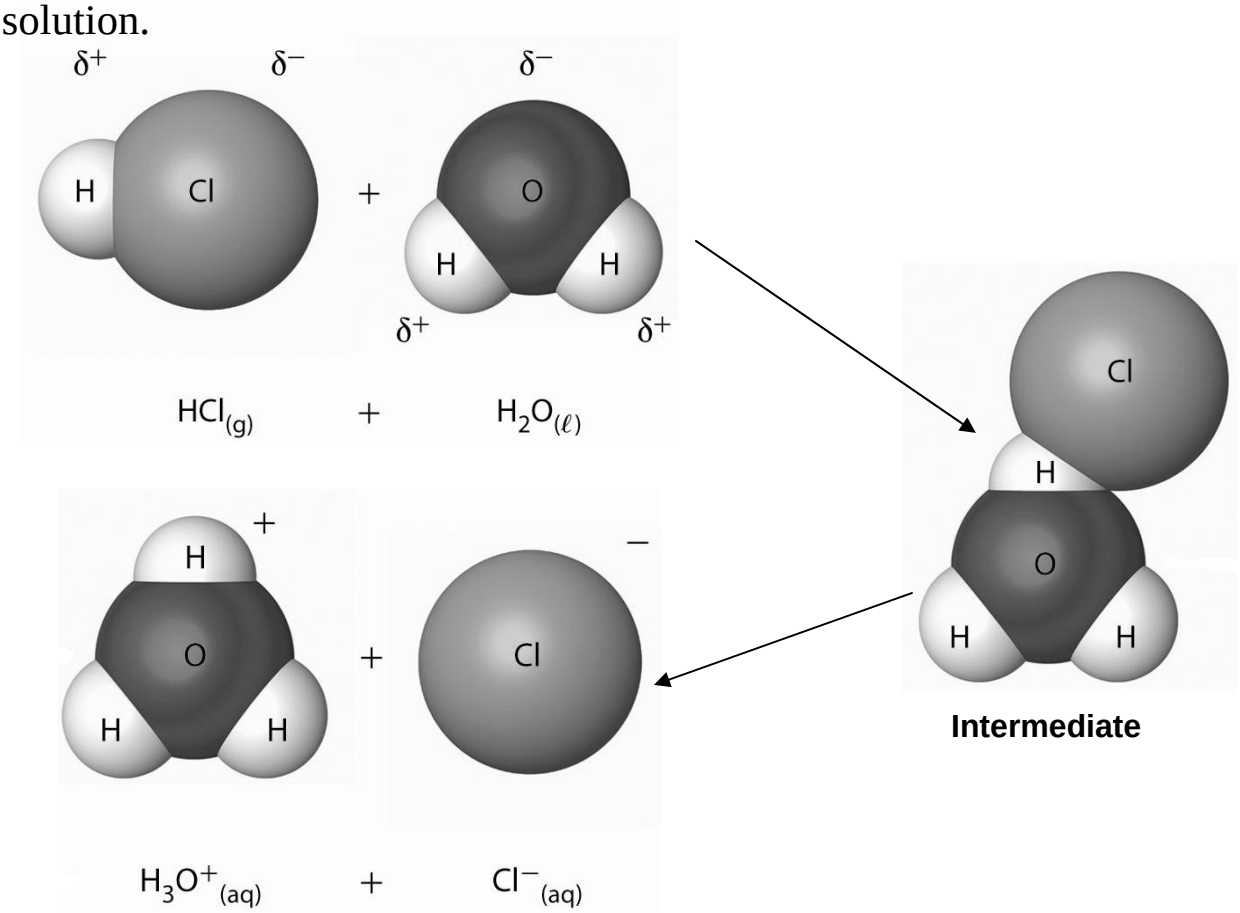
Hydronium Ions in Solution



$H_3O^+(aq)$ is currently accepted as the form in which $H^+(aq)$ exists in solution.



The polar ends of the water molecule attract the oppositely charged polar ends of the hydrogen chloride molecule. The molecular bond between the hydrogen and chloride ions is broken, producing hydronium, $H_3O^+(aq)$, and chloride, Cl^- (aq), ions.