

## Acids and Bases

**Acids** are substances that have a pH below 7 on the pH scale. They are made up of a positively charged ion and a negatively charged ion. The positively charged ion within an acid is usually the hydrogen ion ( $H^+$ ). The **pH scale** measures the amount of  $H^+$  ions in a substance. The hydrogen ion,  $H^+$ , is a positively charged atom created through the loss of one electron.

**Bases** are substances that have a pH higher than 7 on the pH scale. Group 7A elements on the periodic table form negatively charged ions, such as  $Cl^-$  and have a -1 charge. They gain one electron to make them negative. When these negative ions bond to  $H^+$  ions, they form the strong acids HCl, HF, HI and HBr. The name for HCl is Hydrogen Chloride. The names for the ions contained within the acids are the names of the elements. The -ine is dropped from the name of the negative ion and -ide is added.

The  $H^+$  ion also combines with the  $OH^-$  ion to form  $H-O-H$  or water. Water is a **neutral compound** with the pH of 7. Water, since it is a polar molecule, can act as a solvent for an acid. Water molecules can dilute acids by pulling acid molecules away from each other and also separating acid molecules into their ions.