**6 Reactions in Aqueous Solutions** 

**Ionic Compound** 

**Ions in Solution** 

 $Na^{+}$   $Cl^{-}$ 

# **Solubility Rules for Some Common Salts in Water**

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$$\begin{split} & Fe(NO_3)_2 \; (aq) \; + \; NaOH \; (aq) \\ & (NH_4)_3PO_4 \; (aq) \; + \; AlCl_3 \; (aq) \\ & NiCl_2 \; (aq) \; + \; Na_2CO_3 \; (aq) \\ & Pb(NO_3)_2 \; (aq) \; + \; NaI \; (aq) \end{split}$$

double displacement reactions

 $AB + XY \qquad AY + XB$ 

 $A \hspace{1cm} X \hspace{1cm} B \hspace{1cm} Y$ 

## 6.2 Acids and Bases

• H<sup>+</sup> • OH<sup>-</sup>

HCl, HBr, HI, HNO $_3$  , H $_2$ SO $_4$  , and HClO $_4$ 

6.2.1 Dissociation of Acids

\_\_\_\_ H<sup>+</sup>

 $H_2SO4$  (aq)  $H^+$  (aq) + HSO

### **6.3 Oxidation Reduction Reactions**

$$2\ Na\ (s)\ +\ Cl_2\ (g)$$
  $2\ NaCl\ (s)$   $Na$   $Cl$   $Na^+$   $Cl^-$  
$$Na\ Na^+\ +\ e^-$$
 
$$Cl\ +\ e^-\ Cl^-$$

Oxidation

Reduction

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### 6.4.2 Synthesis Reactions

### 6.4.3 Decomposition Reactions

decomposition reactions