## Acids and Bases Introduction

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Arrhenius acids and bases

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HCl(aq) →

The terms "hydrogen ion" and "hydronium ion" and the symbols  $H^+(aq)$  and  $H_3O^+(aq)$  are often used interchangeably for the aqueous ion of hydrogen. Hydronium ion and  $H_3O^+(aq)$  are preferred, but  $H^+(aq)$  is also accepted on the AP Exam.

 $NaOH(s) \rightarrow$ 

Bronsted-Lowry acids and bases

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 $HCI(aq) + H_2O(I) \rightarrow$ 

Lewis acids and bases

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 $NH_3 + BF_3 \rightarrow NH_3BF_3$ 

## **Ionization and Dissociation**

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HBr (aq) + 
$$H_2O(I) \rightarrow$$

$$NH_3(aq) + H_2O(I) \rightleftharpoons$$

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$$KOH(s) \rightarrow$$

$$Fe(OH)_3(s) \rightarrow$$

## **Strong Acids and Bases**

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HI (aq) + 
$$H_2O(I) \rightarrow$$

$$\text{LiOH(s)} \rightarrow$$

Strong Acids

Hydrochloric Acid

Hydrobromic Acid

Hydroiodic Acid

Nitric Acid

Perchloric Acid

Sulfuric Acid

Strong Bases

Lithium hydroxide

Sodium hydroxide

Potassium hydroxide

Rubidium hydroxide

Calcium Hydroxide

Strontium hydroxide

Barium hydroxide

## Weak Acids and Bases

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 $HF(aq) + H_2O(I) \rightleftharpoons$ 

 $CH_3NH_2(aq) + H_2O(I) \rightleftharpoons$