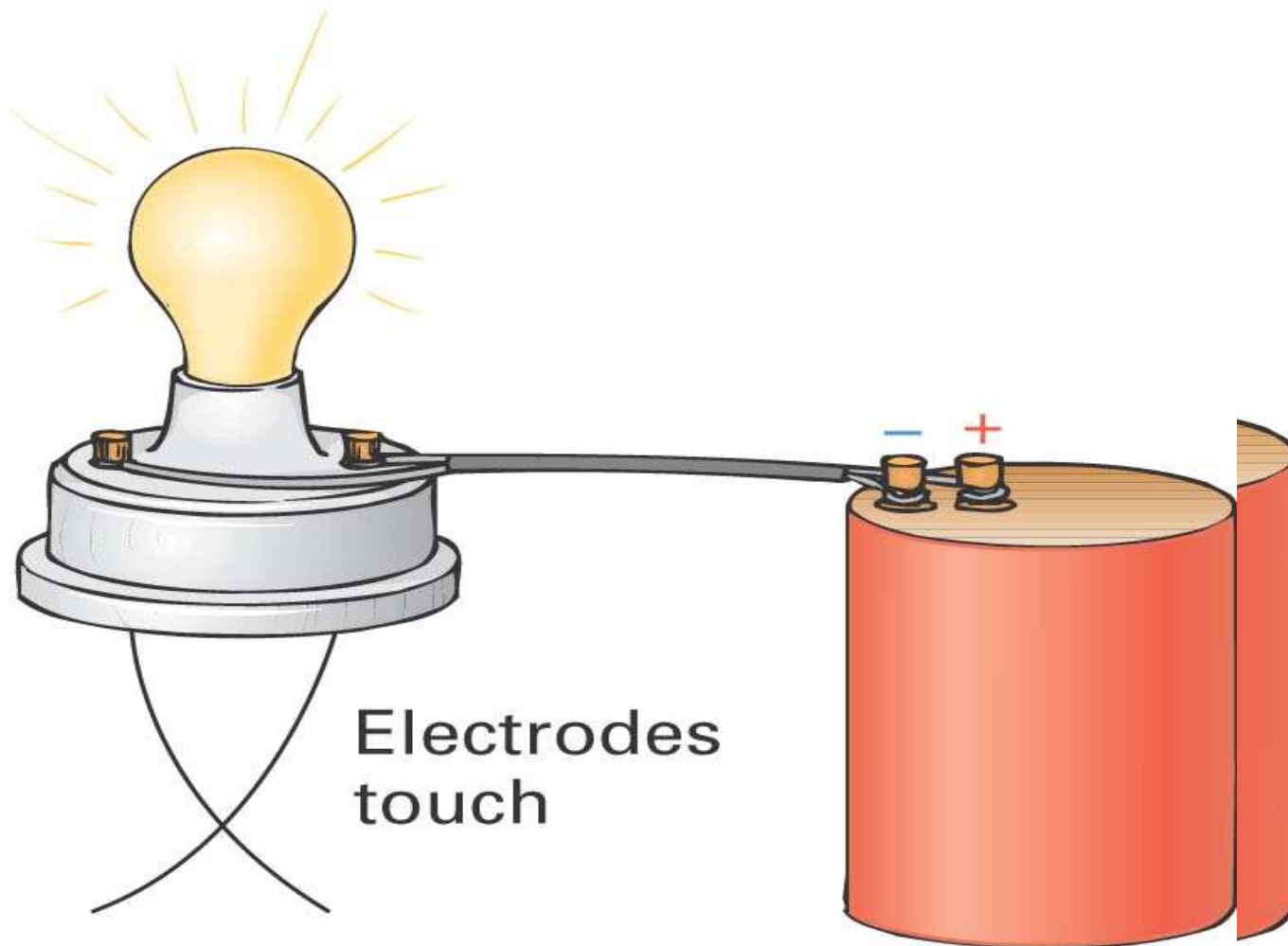
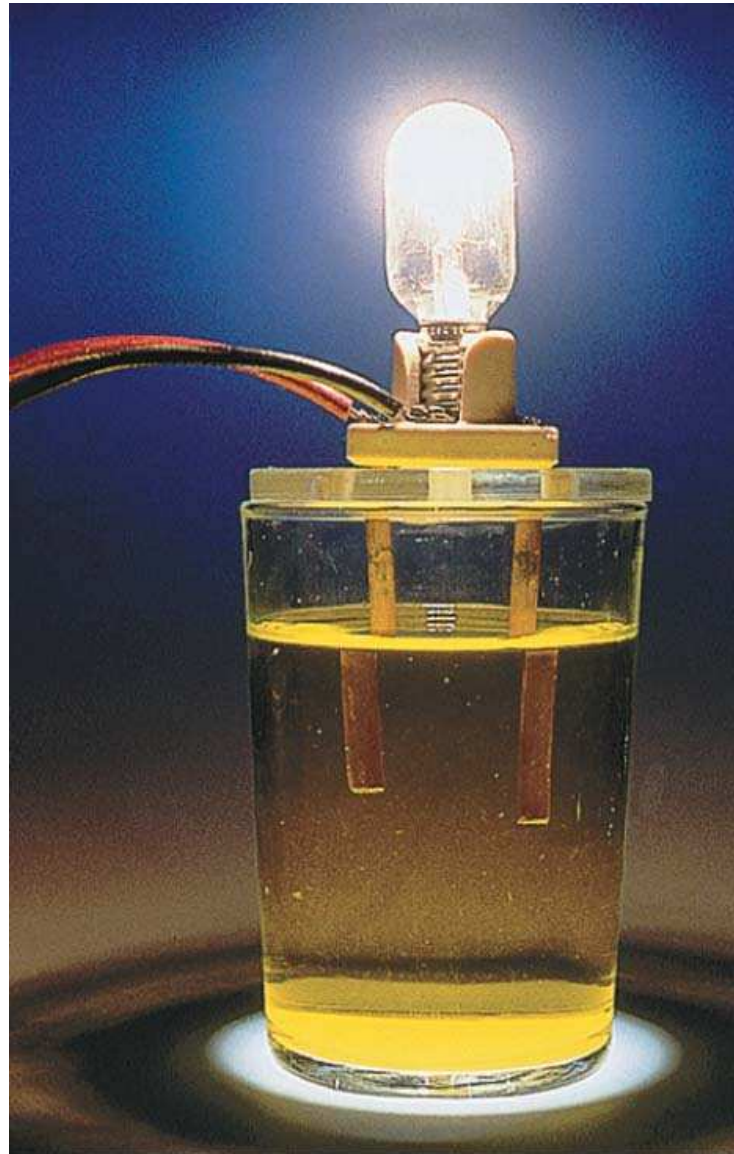


# Ionization- reactions in aqueous media

Bulb is lit



# Solution Conductivity



© 2004 Thomson/Brooks Cole

# Formation of ions

**When dissolved into water the following break up into ions:**

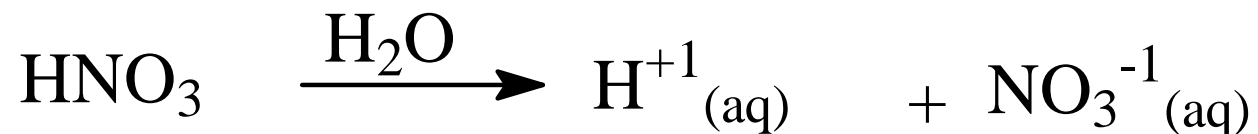
**ionic compounds that are soluble in water**

NaCl is a soluble ionic compound



**strong acids**

HNO<sub>3</sub> is a strong acid



# Solubility Chart- ionic compounds

Ions	Acetate	Bromide	Carbonate	Chlorate	Chloride	Fluoride	Hydrogen Carbonate	Hydroxide	Iodide	Nitrate	Nitrite	Phosphate	Sulfate	Sulfide	Sulfite
<b>Aluminum</b>	s	aq		aq	aq	s		s	—	aq		s	aq	—	
<b>Ammonium</b>	aq	aq	aq	aq	aq	aq	aq	—	aq	aq	aq	aq	aq	aq	aq
<b>Barium</b>	aq	aq	s	aq	aq	s		aq	aq	aq	aq	s	s	—	s
<b>Calcium</b>	aq	aq	s	aq	aq	s		s	aq	aq	aq	s	s	—	s
<b>Cobalt(II)</b>	aq	aq	s	aq	aq	—		s	aq	aq		s	aq	s	s
<b>Copper(II)</b>	aq	aq	s	aq	aq	aq		s		aq		s	aq	s	
<b>Iron(II)</b>	aq	aq	s		aq	s		s	aq	aq		s	aq	s	s
<b>Iron(III)</b>	—	aq			aq	s		s	aq	aq		s	aq	—	
<b>Lead(II)</b>	aq	s	s	aq	s	s		s	s	aq	aq	s	s	s	s
<b>Lithium</b>	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	s	aq	aq	aq
<b>Magnesium</b>	aq	aq	s	aq	aq	s		s	aq	aq	aq	s	aq	—	aq
<b>Nickel</b>	aq	aq	s	aq	aq	aq		s	aq	aq		s	aq	s	s
<b>Potassium</b>	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq
<b>Silver</b>	s	s	s	aq	s	aq		—	s	aq	s	s	s	s	s
<b>Sodium</b>	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq	aq
<b>Zinc</b>	aq	aq	s	aq	aq	aq		s	aq	aq		s	aq	s	s

# Strong Acids

HCl

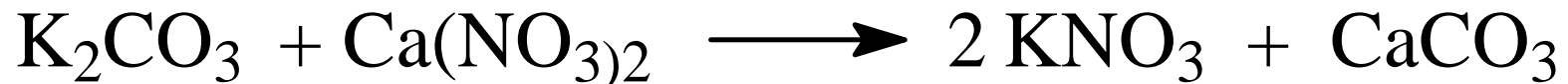
HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub>

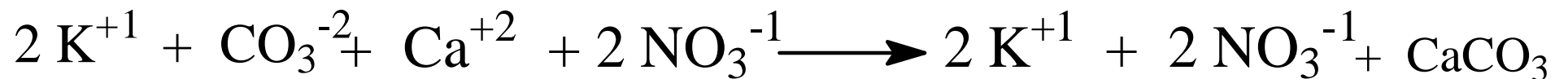
# Double Displacement

potassium carbonate + calcium nitrate  $\longrightarrow$

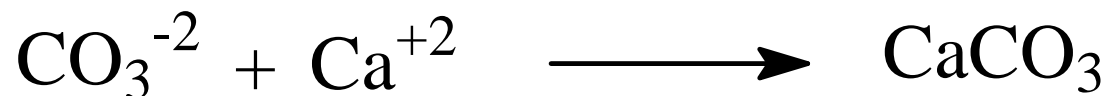
Check solubility chart for solubilities



ionize all soluble ionic compounds



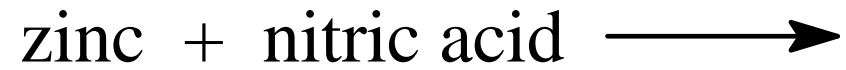
cancel spectator ions



# Q1

Complete, balance, write ionic and net ionic equations for:  
aluminum bromide + lead (II) chlorate

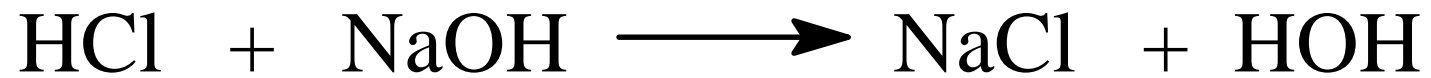
# Single Displacement



# Q2

Complete, balance, write ionic and net ionic equations for:  
aluminum + sulfuric acid  $\rightarrow$

# Neutralization- acid/base reaction



Q3

hydrochloric acid + sodium hydroxide

# Q3 cont.

carbonic acid + barium hydroxide