

### AP Chemistry Solubility Information

#### Solubility Rules:

Always Soluble if these are in a compound...	Except with...
$\text{NO}_3^{1-}$ , Group IA, $\text{NH}_4^{1+}$ , $\text{C}_2\text{H}_3\text{O}_2^{1-}$ , $\text{ClO}_4^{1-}$ , $\text{ClO}_3^{1-}$	No Exceptions
$\text{Cl}^{1-}$ , $\text{Br}^{1-}$ , $\text{I}^{1-}$	$\text{Pb}$ , $\text{Ag}$ , $\text{Hg}_2^{2+}$
$\text{SO}_4^{2-}$	$\text{Ag}$ , $\text{Pb}$ , $\text{Hg}^{2+}$ $\text{Ca}$ , $\text{Sr}$ , $\text{Ba}$

<b>1-</b>	
$\text{ClO}$	hypochlorite
$\text{ClO}_2$	chlorite
$\text{ClO}_3$	chlorate
$\text{ClO}_4$	perchlorate
$\text{CN}$	cyanide
$\text{MnO}_4$	permanganate
$\text{NO}_3$	nitrate
$\text{NO}_2$	nitrite
$\text{OH}$	hydroxide
$\text{HCO}_2$	formate
$\text{HCO}_3$	hydrogen carbonate (bicarbonate)
$\text{HSO}_3$	hydrogen sulfite
$\text{C}_2\text{H}_3\text{O}_2$	acetate
$\text{SCN}$	thiocyanate

<b>1+</b>	
$\text{NH}_4$	ammonium

<b>2-</b>	
$\text{C}_2\text{O}_4$	oxalate
$\text{CO}_3$	carbonate
$\text{Cr}_2\text{O}_7$	dichromate
$\text{CrO}_4$	chromate
$\text{O}_2$	peroxide
$\text{SO}_4$	sulfate
$\text{SO}_3$	sulfite

  

<b>3-</b>	
$\text{PO}_4$	phosphate
$\text{PO}_3$	phosphite

Formula	Weak Acid Names
HNO <sub>2</sub>	nitrous acid
HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>	acetic acid
H <sub>3</sub> PO <sub>4</sub>	phosphoric acid
H <sub>2</sub> SO <sub>3</sub>	sulfurous acid
HF	hydrofluoric acid
H <sub>2</sub> CO <sub>3</sub>	carbonic acid

Formula	Strong Acid Names
HBr	hydrobromic acid
HCl	hydrochloric acid
HI	hydroiodic acid
H <sub>2</sub> SO <sub>4</sub>	sulfuric acid
HNO <sub>3</sub>	nitric acid
HClO <sub>4</sub>	perchloric acid
HClO <sub>3</sub>	chloric acid

**What to “Box Up”:**

Gases, Solids, Insoluble Products, Weak Acids, Weak Bases, Water, Covalent Compounds

**Other Helpful Notes:**

Ammonia has the formula NH<sub>3</sub>

Carbonic acid has the formula H<sub>2</sub>CO<sub>3</sub>

**Common Ionic Charges:**

Zn<sup>2+</sup>  
Ag<sup>1+</sup>

**Diatomic Elements:** “HOFBrINCl”

H<sub>2</sub> O<sub>2</sub> F<sub>2</sub> Br<sub>2</sub> I<sub>2</sub> N<sub>2</sub> Cl<sub>2</sub>