

## Rule # 3. Names and Formulas for Polyatomic Ions

- *Polyatomic ions are ions that contain two or more atoms.*
- *They have a charge which means that they will gain and lose electrons*
- *This allows them to be part of an ionic compound*
- *A list of polyatomic ions is found on the back of your periodic table*

# Polyatomic Ions

## Common Polyatomic Ions

$\text{C}_2\text{H}_3\text{O}_2^-$	acetate	$\text{OH}^-$	hydroxide
$\text{NH}_4^+$	ammonium	$\text{ClO}^-$	hypochlorite
$\text{CO}_3^{2-}$	carbonate	$\text{NO}_3^-$	nitrate
$\text{ClO}_3^-$	chlorate	$\text{NO}_2^-$	nitrite
$\text{ClO}_2^-$	chlorite	$\text{C}_2\text{O}_4^{2-}$	oxalate
$\text{CrO}_4^{2-}$	chromate	$\text{ClO}_4^-$	perchlorate
$\text{CN}^-$	cyanide	$\text{MnO}_4^-$	permanganate
$\text{Cr}_2\text{O}_7^{2-}$	dichromate	$\text{PO}_4^{3-}$	phosphate
$\text{HCO}_3^-$	bicarbonate	$\text{SO}_4^{2-}$	sulfate
$\text{HSO}_4^-$	bisulfate	$\text{SO}_3^{2-}$	sulfite
$\text{HSO}_3^-$	bisulfite		

# Naming with Polyatomic Ions

- *It is the same for naming ionic compounds BUT you must use the names of the polyatomic ions.*
- *The endings will not change to -ide*
- *Examples:*
  - $\text{LiOH}$  → Lithium hydroxide
  - $\text{NH}_4\text{Cl}$  → ammonium Chloride
  - $\text{BaSO}_3$  → Barium Sulphite
  - $\text{CuSO}_4$  → copper (II) sulfate

# Writing Formula's

➤ Same as binary ionic compounds except, when there is more than one of the polyatomic ion needed you must place it in brackets

➤ Example: lithium hydroxide



➤ Example: calcium hydroxide



➤ Example: Copper (II) phosphate



# You Try

➤ Write the name or formula for the following:

1. sodium hydroxide  $\text{NaOH}$
2.  $\text{Sr}(\text{NO}_2)_2$  Strontium nitrite
3. magnesium nitrate  $\text{Mg}(\text{NO}_3)_2$
4.  $\text{NaPO}_4$  sodium phosphate
5. calcium carbonate  
 $\text{CaCO}_3$

## ➤ Notes and Practice

