

# CHEM 161: POLYATOMIC IONS AND NAMING ACIDS

## POLYATOMIC IONS

– Know the formulas and names of the following *polyatomic* ions:

$\text{NH}_4^+$  = ammonium ion

$\text{Hg}_2^{2+}$  = mercury (I) ion

$\text{MnO}_4^-$  = permanganate ion

$\text{C}_2\text{H}_3\text{O}_2^-$  = acetate ion

$\text{PO}_4^{3-}$  = phosphate ion

$\text{CN}^-$  = cyanide ion

$\text{SCN}^-$  = thiocyanate ion

$\text{CrO}_4^{2-}$  = chromate ion

$\text{Cr}_2\text{O}_7^{2-}$  = dichromate ion

$\text{SO}_4^{2-}$  = sulfate ion

$\text{SO}_3^{2-}$  = sulfite ion

$\text{NO}_3^-$  = nitrate ion

$\text{NO}_2^-$  = nitrite ion

$\text{OH}^-$  = hydroxide ion

$\text{O}_2^{2-}$  = peroxide ion

$\text{CO}_3^{2-}$  = carbonate ion

$\text{HCO}_3^-$  = hydrogen

carbonate ion

$\text{ClO}^-$  = hypochlorite ion

$\text{ClO}_2^-$  = chlorite ion

$\text{ClO}_3^-$  = chlorate ion

$\text{ClO}_4^-$  = perchlorate ion

**ACIDS:** Aqueous solutions of a compound that releases  $\text{H}^+$  ions

– usually have H in front, physical state indicated as aqueous (aq)

– naming depends on the ion from which the acid forms

$\text{F}^-$  = fluoride ion  $\xrightarrow{\text{add \# of H's equal to negative charge}}$   $\text{HF}(aq)$  = hydrofluoric acid

$\text{NO}_2^-$  = nitrite ion  $\xrightarrow{\text{add \# of H's equal to negative charge}}$   $\text{HNO}_2(aq)$  = nitrous acid

$\text{NO}_3^-$  = nitrate ion  $\xrightarrow{\text{add \# of H's equal to negative charge}}$   $\text{HNO}_3(aq)$  = nitric acid

For some acids, the stem name changes:

$\text{PO}_4^{3-}$  = phosphate ion  $\xrightarrow{\text{add \# of H's equal to negative charge}}$   $\text{H}_3\text{PO}_4(aq)$  = phosphoric acid