

ALPHABETICAL LIST OF COMMON POLYATOMIC IONS

NAME	FORMULA	CHARGE
Acetate	CH ₃ COO	-1
Ammonium	NH ₄	+1
Arsenate	AsO ₄	-3
Bromate	BrO ₃	-1
Carbonate	CO ₃	-2
Cyanide	CN	-1
Chlorate	ClO ₃	-1
Chlorite	ClO ₂	-1
Chromate	CrO ₄	-2
Dichromate	Cr ₂ O ₇	-2
Dihydrogen phosphate	H ₂ PO ₄	-1
Ethanoate	C ₂ H ₃ O ₂	-1
Hydrogen carbonate	HCO ₃	-1
Hydrogen phosphate	HPO ₄	-2
Hydrogen sulfate	HSO ₄	-1
Hydrogen sulfite	HSO ₃	-1
Hydroxide	OH	-1
Hypochlorite	ClO	-1
Nitrate	NO ₃	-1
Nitrite	NO ₂	-1
Oxalate	C ₂ O ₄	-2
Perchlorate	ClO ₄	-1
Permanganate	MnO ₄	-1
Peroxide	O ₂	-2
Phosphate	PO ₄	-3
Phosphite	PO ₃	-3
Silicate	SiO ₃	-2
Sulfate	SO ₄	-2
Sulfite	SO ₃	-2

Diatomic Molecules

If you see these names in a chemical formula, you would write their diatomic symbol (X₂)

Name	Symbol
Hydrogen	H ₂
Nitrogen	N ₂
Oxygen	O ₂
Fluorine	F ₂
Chlorine	Cl ₂
Bromine	Br ₂
Iodine	I ₂
Astatine	At ₂

Prefixes Used in Naming Binary Molecular Compounds

Prefix	Number
mono-	1
di-	2
tri-	3
tetra-	4
penta-	5
hexa-	6
hepta-	7
octa-	8
nona-	9
deca-	10

Naming Common Acids

Anion ending	Acid Name
-ide	hydro-(stem)- ic acid
-ate	(stem)-ic acid
-ite	(stem)-ous acid

Binary Ionic Compounds: Cation (charge) anion
Roman ends in -ide
Numeral

CHAPTER 101. **GRAMS TO MOLES**

Basic Formula:

$$(\textit{given}) \text{ grams} \cdot \frac{\text{mol}}{\star \text{ grams}} \quad (\star = \text{entire molar mass})$$

2. **MOLES TO GRAMS**

Basic Formula:

$$(\textit{given}) \text{ moles} \cdot \frac{\star \text{ grams}}{\text{mol}} \quad (\star = \text{entire molar mass})$$

Mol to volume (L)

$$\textit{given mol} \cdot \frac{22.4 \text{ L}}{1 \text{ mol}}$$

3. **ATOMS TO MOLES**

Basic Formula:

$$(\textit{given}) \text{ atoms} \cdot \frac{1 \text{ mole}}{6.022 \times 10^{23} \text{ atoms}}$$

Volume (L) to mol

$$\textit{given L} \cdot \frac{1 \text{ mol}}{22.4 \text{ L}}$$

Standard Molar Volume

$$1 \text{ mol} = 22.4 \text{ Liters}$$

4. **MOLES TO ATOMS**

Basic Formula:

$$(\textit{given}) \text{ mol} \cdot \frac{6.022 \times 10^{23} \text{ atoms}}{1 \text{ mol}}$$

5. **GRAMS TO ATOMS**

Basic Formula:

$$(\textit{given}) \text{ grams} \cdot \frac{\text{mol}}{\star \text{ grams}} \cdot \frac{6.022 \times 10^{23} \text{ atoms}}{1 \text{ mol}} \quad (\star = \text{entire molar mass})$$

6. **ATOMS TO GRAMS**

Basic Formula:

$$(\textit{given}) \text{ atoms} \cdot \frac{1 \text{ mol}}{6.022 \times 10^{23} \text{ atoms}} \cdot \frac{\star \text{ grams}}{\text{mol}} \quad (\star = \text{entire molar mass})$$