

KEY

Review: Chemical Formulas, Moles , Percent Composition

Name each of the following compounds

- 1) NaBr = sodium bromide
- 2) H₂SO₃ = sulfurous acid
- 3) Ca(C₂H₃O₂)₂ = calcium acetate
- 4) P₂O₅ = diphosphorus pentoxide
- 5) H₃P = hydrophosphoric acid
- 6) FePO₄ = iron(III) phosphate
ferric phosphate
- 7) K₃N = potassium nitride
- 8) SO₂ = sulfur dioxide
- 9) CuOH = copper(I) hydroxide
cuprous "
- 10) Zn(NO₂)₂ = zinc nitrite
- 11) Na₂CO₃ = sodium carbonate
- 12) H₂S = hydrogen sulfide
- 13) P₂O₅ = phosphorus pentoxide
- 14) FeSO₄ = iron(II) sulfate
ferrous "
- 15) H₃PO₄ = phosphoric acid
- 16) CoBr₂ = cobalt(II) bromide
cobaltous "
- 17) B₂H₄ = diboron tetrahydride
- 18) CO = carbon monoxide
- exception & polyatomic
-ide → hydro 19) HCN = hydrocyanic acid
- 20) Sn(CO₃)₂ = tin(II) Carbonate
Stannous "

Name each of the following chemical compounds and list their molar masses:

- 1) AgNO₃ Silver nitrate 169.87 g/mol
- 2) N₂O₃ dinitrogen trioxide 76.01 g/mol
- 3) CoCl₂ cobalt(II) Chloride 129.84 g/mol
- 5) B₂F₆ diboron Hexafluoride 185.61 g/mol

Write the formulas for the following chemical compounds:

- 1) nickel (III) sulfide = Ni₂S₃
- 2) nitrous acid = HNO₂
- 3) sulfuric acid = H₂SO₄
- 4) diboron tetrabromide = B₂Br₄
- 5) magnesium sulfate = MgSO₄
- 6) hydrofluoric acid = HF
- 7) potassium carbonate = K₂CO₃
- 8) ammonium oxide = (NH₄)₂O
- 9) tin (IV) selenide = SnSe₂
- 10) dinitrogen trioxide = N₂O₃
- 11) hydroseleenic acid = H₂Se
- 12) lithium acetate = LiC₂H₃O₂
- 13) phosphorus trifluoride = PF₃
- 14) silicon tetrafluoride = SiF₄
- 15) silver phosphate = Ag₃PO₄
- 16) carbonic acid = H₂CO₃
- 17) cobalt (II) hydroxide = Co(OH)₂
- 18) hydrobromic acid = HBr

Write the formulas of each of the following chemical compounds and list their molar masses:

- | | | | |
|----|----------------------|----------------|---------------|
| 1) | ammonium phosphate | $(NH_4)_3PO_4$ | 149.09 g/mol |
| 2) | vanadium (V) cyanide | $V(CN)_5$ | 181.09 g/mol |
| 3) | iron (II) fluoride | FeF_2 | 93.84 g/mol |
| 4) | sulfur hexachloride | SCl_6 | 244.18 g/mol. |

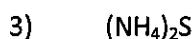
Find the percent compositions of all of the elements in the following compounds:



$$\begin{array}{r} \text{Cu: } 28.4\% \\ \text{Br: } 71.6\% \end{array}$$



$$\begin{array}{r} \text{Na: } 57.5\% \\ \text{O: } 40.0\% \\ \text{H: } 2.5\% \end{array}$$



$$\begin{array}{r} \text{N: } 41.1\% \\ \text{H: } 11.8\% \\ \text{S: } 47.1\% \end{array}$$



$$\begin{array}{r} \text{N: } 30.4\% \\ \text{S: } 69.6\% \end{array}$$

Molar Conversions. Show all correct work and label answers correctly. Answer should be in correct significant figures.

- 1) How many grams does 0.500 moles of CuBr weigh?

$$\underline{0.500 \text{ mol CuBr}} / \underline{143.45 \text{ g/mol}} = 71.79 \text{ CuBr}$$

- 2) How many molecules are there in 0.655 moles of C₆H₁₄?

$$\underline{0.655 \text{ mol C}_6\text{H}_{14}} / \underline{6.02 \times 10^{23} \text{ molec}} = 3.94 \times 10^{23} \text{ molecules C}_6\text{H}_{14}$$

- 3) How many moles are there in 2.35×10^{24} molecules of water?

$$\underline{2.35 \times 10^{24} \text{ molecules H}_2\text{O}} / \underline{6.02 \times 10^{23} \text{ molec}} = 3.90 \text{ moles H}_2\text{O}$$

- 4) How many grams of SiO₂ are there in 5.60×10^{22} molecules of SiO₂?

$$\underline{5.60 \times 10^{22} \text{ molec}} / \underline{1 \text{ mole SiO}_2} / \underline{60.08 \text{ g}} = 5.59 \text{ grams SiO}_2$$

- 5) How many molecules are there in 21.6 grams of CH₄?

$$\underline{21.6 \text{ g CH}_4} / \underline{1 \text{ mol CH}_4} / \underline{6.02 \times 10^{23} \text{ molec}} = 8.13 \times 10^{23} \text{ molec CH}_4$$