WU\_Chem101\_Practice worksheets

[Formula mass](WU_Chem101_Formula%20mass_Worksheet_4)

[Compound Naming](WU_Chem101_%20Compounds%20and%20Naming%20_Worksheet_5)

[Atomic structure](file:///F%3A%5CLecture%5CChem%20101%5CFall_2010%5CWU_Chem101_Atomic%20structure_Worksheet_6)

WU\_Chem101\_Formula mass\_Worksheet\_4

|  |  |
| --- | --- |
| 1.  | Ammonium sulfate, (NH4)2SO4, is a fertilizer widely used as a source of nitrogen. Calculate its molecular mass.  |

|  |  |
| --- | --- |
| A.   | 63.07 amu |

|  |  |
| --- | --- |
| B.   | 114.l0 amu |

|  |  |
| --- | --- |
| C.   | 118.13 amu |

|  |  |
| --- | --- |
| D.   | 128.11 amu |

|  |  |
| --- | --- |
| E.   | 132.13 amu |
| 2.  | Sodium chromate is used to protect iron from corrosion and rusting. Determine its molecular mass.  |

|  |  |
| --- | --- |
| A.   | 261.97 amu |

|  |  |
| --- | --- |
| B.   | 238.98 amu |

|  |  |
| --- | --- |
| C.   | 161.97 amu |

|  |  |
| --- | --- |
| D.   | 138.98 amu |

|  |  |
| --- | --- |
| E.   | 74.99 amu |
| 3.  | Iodine pentafluoride reacts slowly with glass and violently with water. Determine its molecular mass.  |

|  |  |
| --- | --- |
| A.   | 653.52 amu |

|  |  |
| --- | --- |
| B.   | 259.89 amu |

|  |  |
| --- | --- |
| C.   | 221.90 amu |

|  |  |
| --- | --- |
| D.   | 202.90 amu |

|  |  |
| --- | --- |
| E.   | 145.90 amu |
| 4.  | Determine the molecular mass of iron (III) bromide hexahydrate, a substance used as a catalyst in organic reactions.  |

|  |  |
| --- | --- |
| A.   | 403.65 amu |

|  |  |
| --- | --- |
| B.   | 355.54 amu |

|  |  |
| --- | --- |
| C.   | 317.61 amu |

|  |  |
| --- | --- |
| D.   | 313.57 amu |

|  |  |
| --- | --- |
| E.   | 295.56 amu |

|  |  |
| --- | --- |
| 5.  | Calculate the molecular masses of the following:a. Cl2 b. H2O2c. (NH4)2SO4d. Ba(NO3)2  |

WU\_Chem101\_ Compounds and Naming \_Worksheet\_5

|  |  |
| --- | --- |
| 1.  | Which of the following compounds is ionic?  |

|  |  |
| --- | --- |
| A.   | PF3 |

|  |  |
| --- | --- |
| B.   | CS2 |

|  |  |
| --- | --- |
| C.   | HCl |

|  |  |
| --- | --- |
| D.   | SO2 |

|  |  |
| --- | --- |
| E.   | MgCl2 |
| 2.  | Which of the following compounds is covalent?  |

|  |  |
| --- | --- |
| A.   | CaCl2 |

|  |  |
| --- | --- |
| B.   | MgO |

|  |  |
| --- | --- |
| C.   | Al2O3 |

|  |  |
| --- | --- |
| D.   | Cs2S |

|  |  |
| --- | --- |
| E.   | PCl3 |
| 3.  | Sodium oxide combines violently with water. Which of the following gives the formula and the bonding for sodium oxide?  |

|  |  |
| --- | --- |
| A.   | NaO, ionic compound |

|  |  |
| --- | --- |
| B.   | NaO, covalent compound |

|  |  |
| --- | --- |
| C.   | Na2O, ionic compound |

|  |  |
| --- | --- |
| D.   | Na2O, covalent compound |

|  |  |
| --- | --- |
| E.   | Na2O2, ionic compound |
| 4.  | Barium fluoride is used in embalming and in glass manufacturing. Which of the following gives the formula and bonding for barium fluoride?  |

|  |  |
| --- | --- |
| A.   | BaF2, ionic compound |

|  |  |
| --- | --- |
| B.   | BaF2, covalent compound |

|  |  |
| --- | --- |
| C.   | BaF, ionic compound |

|  |  |
| --- | --- |
| D.   | BaF, covalent compound |

|  |  |
| --- | --- |
| E.   | Ba2F, ionic compound |
| 5.  | The colorless substance, MgF2, is used in the ceramics and glass industry. What is its name?  |

|  |  |
| --- | --- |
| A.   | magnesium difluoride |

|  |  |
| --- | --- |
| B.   | magnesium fluoride |

|  |  |
| --- | --- |
| C.   | magnesium(II) fluoride |

|  |  |
| --- | --- |
| D.   | monomagnesium difluoride |

|  |  |
| --- | --- |
| E.   | none of these choices is correct, since they are all misspelled |
| 6.  | The compound, BaO, absorbs water and carbon dioxide readily and is used to dry gases and organic solvents. What is its name?  |

|  |  |
| --- | --- |
| A.   | barium oxide |

|  |  |
| --- | --- |
| B.   | barium(II) oxide |

|  |  |
| --- | --- |
| C.   | barium monoxide |

|  |  |
| --- | --- |
| D.   | baric oxide |

|  |  |
| --- | --- |
| E.   | barium peroxide |
| 7.  | The substance, CaSe, is used in materials which are electron emitters. What is its name?  |

|  |  |
| --- | --- |
| A.   | calcium monoselenide |

|  |  |
| --- | --- |
| B.   | calcium(II) selenide |

|  |  |
| --- | --- |
| C.   | calcium selenide |

|  |  |
| --- | --- |
| D.   | calcium(I) selenide |

|  |  |
| --- | --- |
| E.   | calcium(II) selenium |
| 8.  | The substance, CoCl2, is useful as a humidity indicator because it changes from pale blue to pink as it gains water from moist air. What is its name?  |

|  |  |
| --- | --- |
| A.   | cobalt dichloride |

|  |  |
| --- | --- |
| B.   | cobalt(II) chloride |

|  |  |
| --- | --- |
| C.   | cobalt chloride |

|  |  |
| --- | --- |
| D.   | cobaltic chloride |

|  |  |
| --- | --- |
| E.   | copper(II) chloride |
| 9.  | A red glaze on porcelain can be produced by using MnSO4. What is its name?  |

|  |  |
| --- | --- |
| A.   | manganese disulfate |

|  |  |
| --- | --- |
| B.   | manganese(II) sulfate |

|  |  |
| --- | --- |
| C.   | manganese(IV) sulfate |

|  |  |
| --- | --- |
| D.   | manganese sulfate |

|  |  |
| --- | --- |
| E.   | manganese(I) sulfate |
| 10.  | The compound, (NH4)2S, can be used in analysis for trace amounts of metals present in a sample. What is its name?  |

|  |  |
| --- | --- |
| A.   | ammonium sulfide |

|  |  |
| --- | --- |
| B.   | diammonium sulfide |

|  |  |
| --- | --- |
| C.   | ammonium sulfite |

|  |  |
| --- | --- |
| D.   | ammonia(I) sulfite |

|  |  |
| --- | --- |
| E.   | ammonium(I) sulfide |
| 11.  | The substance, KClO3, is a strong oxidizer used in explosives, fireworks, and matches. What is its name?  |

|  |  |
| --- | --- |
| A.   | potassium chlorite |

|  |  |
| --- | --- |
| B.   | potassium chloride |

|  |  |
| --- | --- |
| C.   | potassium(I) chlorite |

|  |  |
| --- | --- |
| D.   | potassium(I) chlorate |

|  |  |
| --- | --- |
| E.   | potassium chlorate |
| 12.  | The compound, NaH2PO4, is present in many baking powders. What is its name?  |

|  |  |
| --- | --- |
| A.   | sodium biphosphate |

|  |  |
| --- | --- |
| B.   | sodium hydrogen phosphate |

|  |  |
| --- | --- |
| C.   | sodium dihydrogen phosphate |

|  |  |
| --- | --- |
| D.   | sodium hydrophosphate |

|  |  |
| --- | --- |
| E.   | sodium dihydride phosphate |
| 13.  | Zinc acetate is used in preserving wood and in manufacturing glazes for porcelain. What is its formula?  |

|  |  |
| --- | --- |
| A.   | ZnAc2 |

|  |  |
| --- | --- |
| B.   | ZnCH3COO |

|  |  |
| --- | --- |
| C.   | Zn(CH3COO)2 |

|  |  |
| --- | --- |
| D.   | Zn2CH3COO |

|  |  |
| --- | --- |
| E.   | ZnCH3COCH3 |
| 14.  | Silver chloride is used in photographic emulsions. What is its formula?  |

|  |  |
| --- | --- |
| A.   | Ag2Cl3 |

|  |  |
| --- | --- |
| B.   | Ag2Cl |

|  |  |
| --- | --- |
| C.   | AgCl3 |

|  |  |
| --- | --- |
| D.   | AgCl2 |

|  |  |
| --- | --- |
| E.   | AgCl |
| 15.  | Barium sulfate is used in manufacturing photographic paper. What is its formula?  |

|  |  |
| --- | --- |
| A.   | BaSO4 |

|  |  |
| --- | --- |
| B.   | Ba(SO4)2 |

|  |  |
| --- | --- |
| C.   | Ba2SO4 |

|  |  |
| --- | --- |
| D.   | Ba2(SO4)3 |

|  |  |
| --- | --- |
| E.   | BaSO3 |
| 16.  | Sodium peroxide is an oxidizer used to bleach animal and vegetable fibers. What is its formula?  |

|  |  |
| --- | --- |
| A.   | NaO |

|  |  |
| --- | --- |
| B.   | NaO2 |

|  |  |
| --- | --- |
| C.   | Na2O2 |

|  |  |
| --- | --- |
| D.   | Na2O |

|  |  |
| --- | --- |
| E.   | NaH2O2 |
| 17.  | What is the formula for magnesium sulfide?  |

|  |  |
| --- | --- |
| A.   | MgS |

|  |  |
| --- | --- |
| B.   | MgS2 |

|  |  |
| --- | --- |
| C.   | Mg2S |

|  |  |
| --- | --- |
| D.   | Mg2S3 |

|  |  |
| --- | --- |
| E.   | MgSO4 |
| 18.  | Ferric oxide is used as a pigment in metal polishing. Which of the following is its formula?  |

|  |  |
| --- | --- |
| A.   | FeO |

|  |  |
| --- | --- |
| B.   | Fe2O |

|  |  |
| --- | --- |
| C.   | FeO3 |

|  |  |
| --- | --- |
| D.   | Fe2O5 |

|  |  |
| --- | --- |
| E.   | Fe2O3 |
| 19  | Potassium permanganate is a strong oxidizer that reacts explosively with easily oxidized materials. What is its formula?  |

|  |  |
| --- | --- |
| A.   | KMnO3 |

|  |  |
| --- | --- |
| B.   | KMnO4 |

|  |  |
| --- | --- |
| C.   | K2MnO4 |

|  |  |
| --- | --- |
| D.   | K(MnO4)2 |

|  |  |
| --- | --- |
| E.   | K2Mn2O7 |
| 20  | Calcium hydroxide is used in mortar, plaster and cement. What is its formula?  |

|  |  |
| --- | --- |
| A.   | CaOH |

|  |  |
| --- | --- |
| B.   | CaOH2 |

|  |  |
| --- | --- |
| C.   | Ca2OH |

|  |  |
| --- | --- |
| D.   | Ca(OH)2 |

|  |  |
| --- | --- |
| E.   | CaHO2 |
| 21.  | Which one of the following formulas of ionic compounds is the least likely to be correct?  |

|  |  |
| --- | --- |
| A.   | NH4Cl |

|  |  |
| --- | --- |
| B.   | Ba(OH)2 |

|  |  |
| --- | --- |
| C.   | Na2SO4 |

|  |  |
| --- | --- |
| D.   | Ca2NO3 |

|  |  |
| --- | --- |
| E.   | Cu(CN)2 |
| 22.  | Which one of the following formulas of ionic compounds is the least likely to be correct?  |

|  |  |
| --- | --- |
| A.   | CaCl2 |

|  |  |
| --- | --- |
| B.   | NaSO4 |

|  |  |
| --- | --- |
| C.   | MgCO3 |

|  |  |
| --- | --- |
| D.   | KF |

|  |  |
| --- | --- |
| E.   | Cu(NO3)2 |
| 23.  | What is the name of PCl3?  |

|  |  |
| --- | --- |
| A.   | phosphorus chloride |

|  |  |
| --- | --- |
| B.   | phosphoric chloride |

|  |  |
| --- | --- |
| C.   | phosphorus trichlorate |

|  |  |
| --- | --- |
| D.   | trichlorophosphide |

|  |  |
| --- | --- |
| E.   | phosphorus trichloride |
| 24. | The compound, P4S10, is used in the manufacture of safety matches. What is its name?  |

|  |  |
| --- | --- |
| A.   | phosphorus sulfide |

|  |  |
| --- | --- |
| B.   | phosphoric sulfide |

|  |  |
| --- | --- |
| C.   | phosphorus decasulfide |

|  |  |
| --- | --- |
| D.   | tetraphosphorus decasulfide |

|  |  |
| --- | --- |
| E.   | phosphorus sulfide |
| 25.  | What is the name of IF7?  |

|  |  |
| --- | --- |
| A.   | iodine fluoride |

|  |  |
| --- | --- |
| B.   | iodic fluoride |

|  |  |
| --- | --- |
| C.   | iodine heptafluoride |

|  |  |
| --- | --- |
| D.   | heptafluoroiodide |

|  |  |
| --- | --- |
| E.   | heptafluorine iodide |
| 26.  | What is the name of P4Se3?  |

|  |  |
| --- | --- |
| A.   | phosphorus selenide |

|  |  |
| --- | --- |
| B.   | phosphorus triselenide |

|  |  |
| --- | --- |
| C.   | tetraphosphorus selenide |

|  |  |
| --- | --- |
| D.   | phosphoric selenide |

|  |  |
| --- | --- |
| E.   | tetraphosphorus triselenide |
| 27.  | Chlorine dioxide is a strong oxidizer that is used for bleaching flour and textiles and for purification of water. What is its formula?  |

|  |  |
| --- | --- |
| A.   | (ClO)2 |

|  |  |
| --- | --- |
| B.   | Cl2O |

|  |  |
| --- | --- |
| C.   | Cl2O2 |

|  |  |
| --- | --- |
| D.   | Cl2O4 |

|  |  |
| --- | --- |
| E.   | ClO2 |

WU\_Chem101\_Atomic structure\_Worksheet\_6

|  |  |
| --- | --- |
| 1. | Fill in the blank spaces and write out all the symbols in the left hand column in full, in the form  Picture (i.e., include the appropriate values of *Z* and *A* as well as the correct symbol X).Symbol # protons # neutrons # electrons… 17 18 …Au … 118 …… … 20 20  |