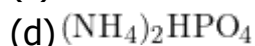
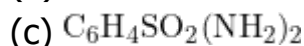
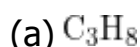


A. The Mole and Molar Mass.

1. Calculate the molar mass of each of the following compounds:



[H = 1, C = 12, N = 14, O = 16, Mg = 24, Al = 27, P = 31, S = 32, Cl = 35.5]

2. A sample of iron (Fe) has a mass of 22.4 g. Calculate the:

(a) number of moles present.

(b) number of iron atoms present.

[Fe = 56, $N_A = 6.02 \times 10^{23}$]

3. A sample of Hydrogen gas has a mass of 20.0 g. Calculate the:

(a) number of hydrogen molecules present.

(b) number of hydrogen atoms present.

[H = 1, $N_A = 6.02 \times 10^{23}$]

4. What mass of Nitrogen gas at 25°C would contain:

(a) 2.41×10^{25} molecules of Nitrogen?

(b) 8.64×10^{24} atoms of Nitrogen?

[N = 14, $N_A = 6.02 \times 10^{23}$]

5. Calculate the average mass in grams of:

(a) one Oxygen atom.

(b) one Calcium atom.

[O = 16, Ca = 40, $N_A = 6.02 \times 10^{23}$]

B. Percent Composition and Formulas of Compounds.

6. Find the percentage composition by mass of each of the following compounds:

