

Name _____

Chapter 6 Practice 1

1. How many moles are in a sample of

a. 6.5×10^{24} C atoms?

b. 2.77×10^{22} Li atoms?

2. What is the mass in grams of

a. 6.55 mole Pb?

b. 0.444 moles of S?

3. A helium balloon contains 3.44 grams of helium. How many moles of helium are in the balloon?

4. A copper wire contains 0.332 moles of Cu. What is the mass of the wire in grams?

5. What is the mass of 2.88×10^{24} atoms of cobalt?

6. A helium balloon contains 2.55 kg of helium. How many atoms of Helium are in the balloon?

7. What is the molar mass of

a. strontium nitrate $\text{Sr}(\text{NO}_3)_2$?

b. lithium oxide Li_2O ?

c. iron (III) sulfate?

d. magnesium chloride

7. What is the mass in grams of

a. 4.00 moles of glucose, $C_6H_{12}O_6$?

b. 0.576 mmoles of N_2O_5 ?

8. What is the mass of

a. 4.30×10^{27} molecules of carbon monoxide gas (CO)

b. 3.12×10^{21} formula units of iron (III) sulfide (Fe_2S_3)

9. How many molecules are in 15.0 mg of silicon tetrafluoride (SiF_4)?

10. Aspartame is an artificial sweetener that is 160 times sweeter than sucrose (table sugar) when dissolved in water. It is marketed by G.D. Searle as *Nutra Sweet*. The molecular formula of aspartame is $C_{14}H_{18}N_2O_5$.

a) Calculate the molar mass of aspartame.

b) How many moles of molecules are in 10 g of aspartame?

c) What is the mass in grams of 1.56 moles of aspartame?

d) How many molecules are in 5 **mg** of aspartame?