

Chemistry – Chapter 10 Book problems #1: Mole conversions & particles

1. How many moles is 2.80×10^{24} atoms of silicon?
2. How many moles is 2.17×10^{23} representative particles of bromine?
3. How many atoms are in 1.14 mol of sulfur trioxide (SO_3)?
4. How many **carbon** atoms are in 2.12 mol of propane (C_3H_8)?
How many **hydrogen** atoms are in 2.12 mol of propane(C_3H_8)?
5. How many moles is 1.50×10^{23} molecules of NH_3 ?
6. How many atoms are in 1.75 mol of CHCl_3 ?
7. What is the molar mass of CaSO_4 ?
8. Name the representative particle (atom, molecule, or formula unit) of each substance.
 - a. oxygen gas
 - b. sodium sulfide
 - c. sulfur dioxide
 - d. potassium
9. How many hydrogen atoms are in a representative particle of each substance?
 - a. $\text{Al}(\text{OH})_3$
 - b. $\text{H}_2\text{C}_2\text{O}_4$
 - c. $(\text{NH}_4)_2\text{HPO}_4$
 - d. $\text{C}_4\text{H}_{10}\text{O}$
10. Find the number of moles in each substance.
 - a. 2.41×10^{24} formula units of NaCl
 - b. 9.03×10^{24} atoms of Hg
 - c. 4.65×10^{24} molecules of NO_2
11. Which contains more molecules: 1.00 mol C_2H_2 , 1.00 mol C_2H_6 , or 1.00 mol CO ?
12. Which contains more atoms: 1.00 mol C_2H_2 , 1.00 mol C_2H_6 , or 1.00 mol CO ?
13. Find the number of representative particles in each substance.
 - a. 3.00 mol Sn
 - b. 0.400 mol KCl
 - c. 7.50 mol SO_2
 - d. 4.80×10^{-3} mol NaI