

16. Find the mass, in grams, of 4.52×10^{-3} mol $\text{C}_{20}\text{H}_{42}$
17. Calculate the mass, in grams, of 2.50 mol of iron (II) hydroxide.
18. Find the number of moles in 3.70×10^{-1} g of boron.
19. Calculate the number of moles in 75.0 g of dinitrogen trioxide.
20. What is the volume of these gases at STP?
 - a. 3.20×10^{-3} mol CO_2
 - b. 3.70 mol N_2
 - c. 0.960 mol CH_4
21. At STP, how many moles are in these volumes of gases?
 - a. 67.2 L SO_2
 - b. 0.880 L He
 - c. 1.00×10^3 L C_2H_6
22. A gaseous compound composed of sulfur and oxygen has a density of 3.58 g/L at STP. What is the molar mass of this gas?
23. What is the density of krypton gas at STP?
26. How many grams are in 5.66 mol of CaCO_3 ?
27. Find the number of moles in 508 g of ethanol ($\text{C}_2\text{H}_6\text{O}$).
28. What is the volume, in liters, of 1.50 mol Cl_2 at STP?
29. Three balloons filled with three different gaseous compounds each have a volume of 22.4 L at STP. Do these balloons have the same mass or contain the same number of molecules? Explain.
30. The density of an elemental gas is 1.7824 g/L at STP. What is the molar mass of the element?

31. The densities of gases A, B, and C at STP are 1.25 g/L, 2.86 g/L, and 0.714 g/L respectively. Calculate the molar mass of each substance. Identify each substance as ammonia (NH_3), sulfur dioxide (SO_2), chlorine (Cl_2), nitrogen (N_2), or methane (CH_4).