

Part III: Solve each problem. Clearly show all your work. Round answers to the correct number of significant figures and include appropriate units.

15. How many moles of SO_2 are in 2.12 grams of SO_2 ?

16. How many grams of C_2H_6 are in 5.02 moles of C_2H_6 ?

17. How many molecules of H_2O are in 3.1 moles of H_2O ?

18. How many moles of Cl_2 gas at STP are in 10.5 liters of Cl_2 gas?

19. How many liters of NO_2 gas at STP are in 41.9 grams of NO_2 gas?

20. How many formula units of potassium oxide are in 2.0 moles of potassium oxide? (Hint: you must first write the correct formula for this ionic compound)
21. How many grams of lithium bromide are in 8.04×10^{24} formula units of lithium bromide?
22. How many grams of phosphorus pentoxide are in 4.3×10^{26} molecules of phosphorus pentoxide?
23. How many molecules of boron tribromide are in 27 grams of boron tribromide?
24. How many molecules of dinitrogen tetroxide gas at STP are in 5.0 liters of dinitrogen tetroxide gas?
25. How many formula units of calcium hydroxide are in 3.99 grams of calcium hydroxide?