

Avogadro's Number

Practice Problems

Part A

$$\textcircled{1} 2.80 \times 10^{24} \text{ atoms Si} \times \frac{1 \text{ mol}}{6.02 \times 10^{23} \text{ atoms}} = 4.65 \text{ mol Si}$$

$$\textcircled{2} 8.70 \times 10^{22} \text{ molecules SiO}_2 \times \frac{1 \text{ mol}}{6.02 \times 10^{23} \text{ molecules}} = 0.14 \text{ mol SiO}_2$$

$$\textcircled{3} 1.90 \times 10^{25} \text{ atoms Hg} \times \frac{1 \text{ mol}}{6.02 \times 10^{23} \text{ atoms}} = 31.56 \text{ mol Hg}$$

Part B

$$\textcircled{1} 7.50 \text{ mol SO}_2 \times \frac{6.02 \times 10^{23} \text{ molecules}}{1 \text{ mol}} = 4.52 \times 10^{24} \text{ molecules SO}_2$$

$$\textcircled{2} 0.57 \text{ mol Fe} \times \frac{6.02 \times 10^{23} \text{ atoms}}{1 \text{ mol}} = 3.43 \times 10^{23} \text{ atoms Fe}$$

$$\textcircled{3} 21.50 \text{ mol BF}_3 \times \frac{6.02 \times 10^{23} \text{ molecules}}{1 \text{ mol}} = 1.29 \times 10^{25} \text{ molecules BF}_3$$