

1. How many moles are in 7.59×10^{24} atoms of lithium?

$$7.59 \times 10^{24} \text{ atoms} \times \frac{1 \text{ mol}}{6.022 \times 10^{23} \text{ atoms}} \\ = 12.6 \text{ mol Li}$$

2. How many molecules are in 0.23 mol of NaCl?

$$0.23 \text{ mol NaCl} \times \frac{6.022 \times 10^{23} \text{ molecules}}{1 \text{ mol}} \\ = 1.4 \times 10^{23} \text{ molecules NaCl}$$

3. How many atoms are in 0.23 mol of NaCl?

$$0.23 \text{ mol NaCl} \times \frac{6.022 \times 10^{23} \text{ molecules}}{1 \text{ mol}} \\ \times \frac{2 \text{ atoms}}{1 \text{ molecule}} = 2.8 \times 10^{23} \text{ atoms NaCl.}$$

4. How many atoms are in 3 molecules of $\text{Ca}_3(\text{PO}_4)_2$?

$$\begin{array}{l} \text{Ca} = 3 \\ \text{P} = 2 \\ \text{O} = 4 \times 2 = 8 \end{array} \quad \begin{array}{l} 13 \text{ atoms} \\ 3 \text{ molecules} \times \frac{13 \text{ atoms}}{1 \text{ molecule}} \\ = 39 \text{ atoms} \\ \text{Ca}_3(\text{PO}_4)_2 \end{array}$$

total = 13