

Moles Worksheet

Define "mole".

represents atoms and molecules. 6.02×10^{23}

How many moles are present in 34 grams of $\text{Cu}(\text{OH})_2$?

$$\begin{array}{l} \text{Cu} = 1 \times 64 = 64 \quad 98 \text{ g/m} \\ \text{H} = 2 \times 1 = 2 \\ \text{O} = 2 \times 16 = 32 \\ \hline 34 \text{ g Cu(OH)}_2 \quad \frac{1 \text{ moles}}{98 \text{ g}} \end{array}$$

$$\frac{34}{98} = 0.35 \text{ moles}$$

How many moles are present in 2.45×10^{23} molecules of CH_4 ?

$$\begin{array}{l} \text{C} = 1 \times 12 = 12 \\ \text{H} = 4 \times 1 = 4 \\ \hline 16 \text{ g/mole} \end{array}$$

$$\frac{2.45 \times 10^{23}}{6.02 \times 10^{23}} = 0.41$$

How many grams are there in 3.4×10^{24} molecules of NH_3 ?

$$96 \text{ grams}$$

How much does 4.2 moles of $\text{Ca}(\text{NO}_3)_2$ weigh?

$$\begin{array}{l} \text{Ca} = 1 \times 40 = 40 \\ \text{N} = 2 \times 14 = 28 \\ \text{O} = 6 \times 16 = 96 \\ \hline 164 \text{ g/m} \end{array} \quad \frac{4.2 \text{ mole}}{1} \quad \frac{164 \text{ g}}{1 \text{ mole}} = 688.8 \text{ g}$$

What is the molar mass of MgO ?

$$\begin{array}{l} \text{Mg} = 1 \times 24 = 24 \\ \text{O} = 1 \times 16 = 16 \\ \hline = 40 \text{ g/mole} \end{array} \quad \text{40.3 grams/mole}$$

How are the terms "molar mass" and "atomic mass" different from one another?

Molar mass = The mass of one mole of a compound

Atomic mass = The mass of one mole of a element

Which is a better unit for expressing molar mass, "amu" or "grams/mole"?

g/mole