

THE MOLE: 6.022×10^{23}



What is a Mole?

- One mole is the amount of a substance that contains 6.022×10^{23} atoms or molecules. It is specifically defined as the number of atoms contained in 12 grams of carbon-12. This is also known as 'Avogadro's Number' (N_A); it is named after the Italian scientist Amedeo Avogadro (left), a suggestion put forward by French scientist Jean Perrin to recognise Avogadro's work.



One mole is essentially

602,214,179,000,000,000,000,000

of something - in chemistry, atoms or molecules



Water



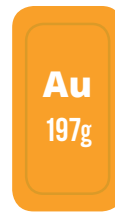
Iron



Oxygen



Table Salt



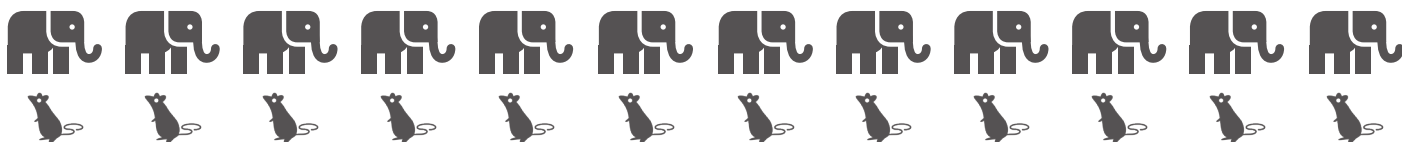
Gold



Helium

ONE MOLE IS A DIFFERENT MASS FOR DIFFERENT ELEMENTS & COMPOUNDS

This may seem confusing; however, it's similar to comparing a dozen elephants to a dozen mice. Although their masses may be very different, you still have a dozen of each!



A mole is often referred to as 'a chemist's dozen'

IT'S JUST AN EASIER WAY TO COUNT LARGE NUMBERS OF ATOMS & MOLECULES

$$\text{NO. OF MOLES} = \text{MASS (g)} \div \text{MASS OF 1 MOLE (g)}$$

