



Amedeo Avogadro

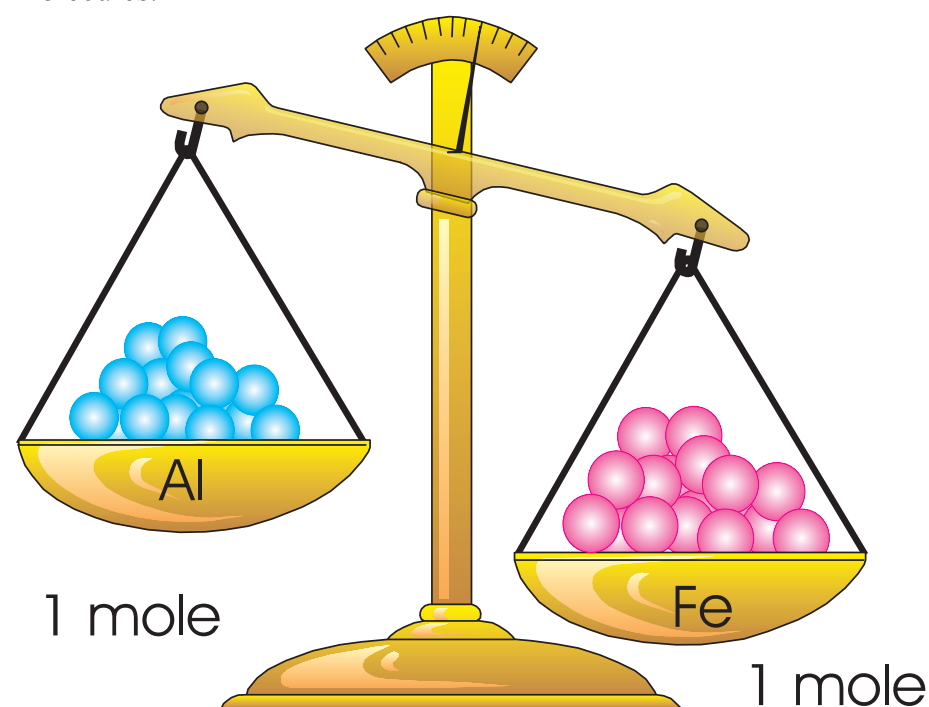
1776 - 1856

Amedeo Conta de Quaregna Avogadro was one of the founders of physical chemistry. Although he was a professor of physics, he acknowledged no boundary between physics and chemistry, and based most of his findings on a mathematical approach.

What did this great man contribute to science? His main achievement was the so-called '*Avogadro's law*'. This law states that equal volumes of all gases, kept at the same temperature and pressure, contain the same number of molecules. Using his theory Avogadro concluded that hydrogen and oxygen are diatomic molecules (H_2 and O_2). He also assigned the formula H_2O to water.

It follows from *Avogadro's law* that a mole of any substance (the number of grams equal to the molecular weight) contains the same number of molecules. This is $N=6.022137 \times 10^{23}$ and is called *Avogadro's number* after him.

It was very sad that leading scientists of the day did not recognize the importance of his hypothesis for 50 years. It was two years after Avogadro's death when the physicist Stanislao Cannizzaro showed how the application of Avogadro's idea could be used to obtain composition of all molecules.



He was soon bored by the practice of law



Avogadro was born in 1776, in Turin, the capital of the Italian province Piedmont, into the family of a lawyer. Following the family tradition, Amedeo joined the legal profession. However, he was soon bored by the practice of law. Since his youth he had been interested in geometry and experimental physics, but he had not had the necessary knowledge to pursue them seriously. When Avogadro was 25 years of age, however, he began to devote all his free time to teaching himself physics and mathematics.

In 1803 he and his brother (also a physicist) presented for the first time two papers on electricity to the Turin Academy. In 1809 he became Professor of Physics at the Royal College at Vercelli, where he taught physics and mathematics.

In 1819 Avogadro was elected as a full member of the Turin Academy and in 1820, by royal decree, he was appointed Head of the Physics Department at Turin University. **But in 1822 after student disturbances, the department was closed and Avogadro was moved to the post of senior inspector of government expenses, a position very far from science.**

Avogadro was well over 30 years of age when he met his future wife, the daughter of a notary. She was 18 years younger than him. They had two sons and six daughters.

In 1832 he once again took over the Physics Department at Turin University and remained there until his retirement in 1850.

His contemporaries described him as a wise, modest, very sincere and kind person. He despised luxury and was indifferent to his own fame and glory.

A year after Avogadro's death, a bronze bust was put up in his memory in Turin University.