The Mole and Avogadro's Number

Picture Vocabulary

C3C The Mole and Avogadro's Number

Mole

A mole is the SI unit used to describe an amount of a substance. It is equal to 6.02×10^{23} atoms or molecules of a substance. One mole is the amount of any substance that contains the same number of units as the number of atoms in exactly 12 grams of carbon-12.

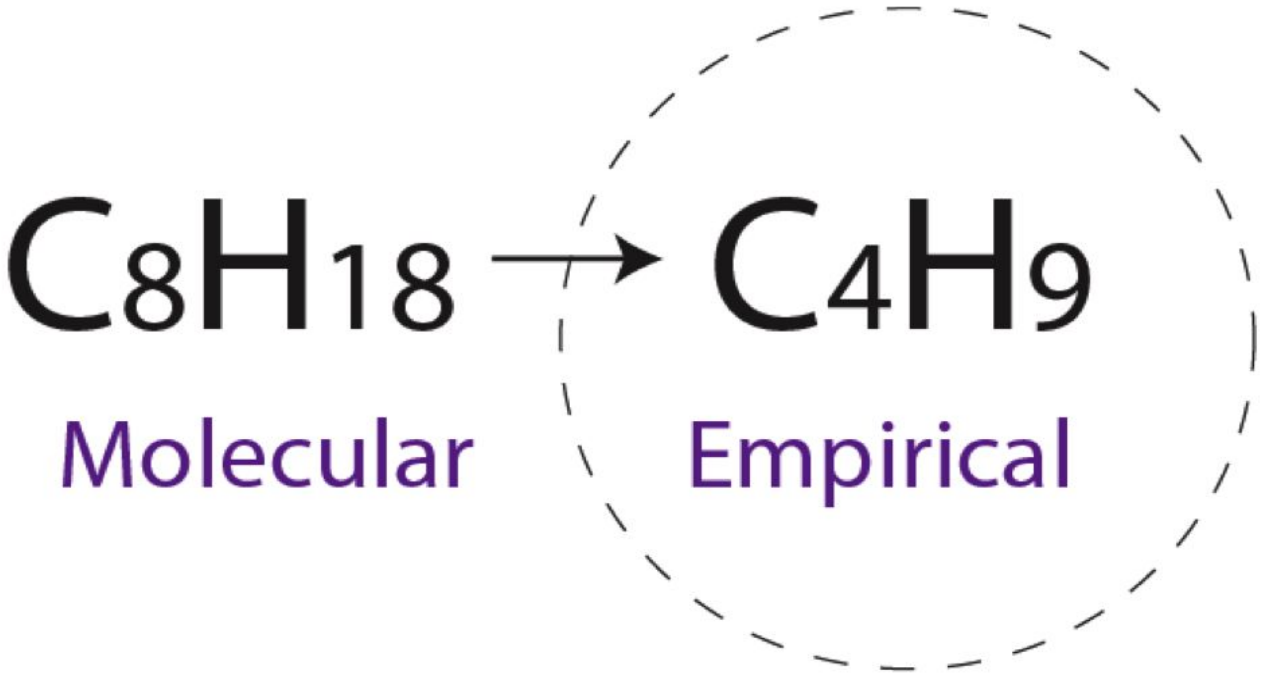
Avogadro's number

Expressed as 6.02×10^{23}; the number of representative particles contained in one mole of a substance

Molar mass

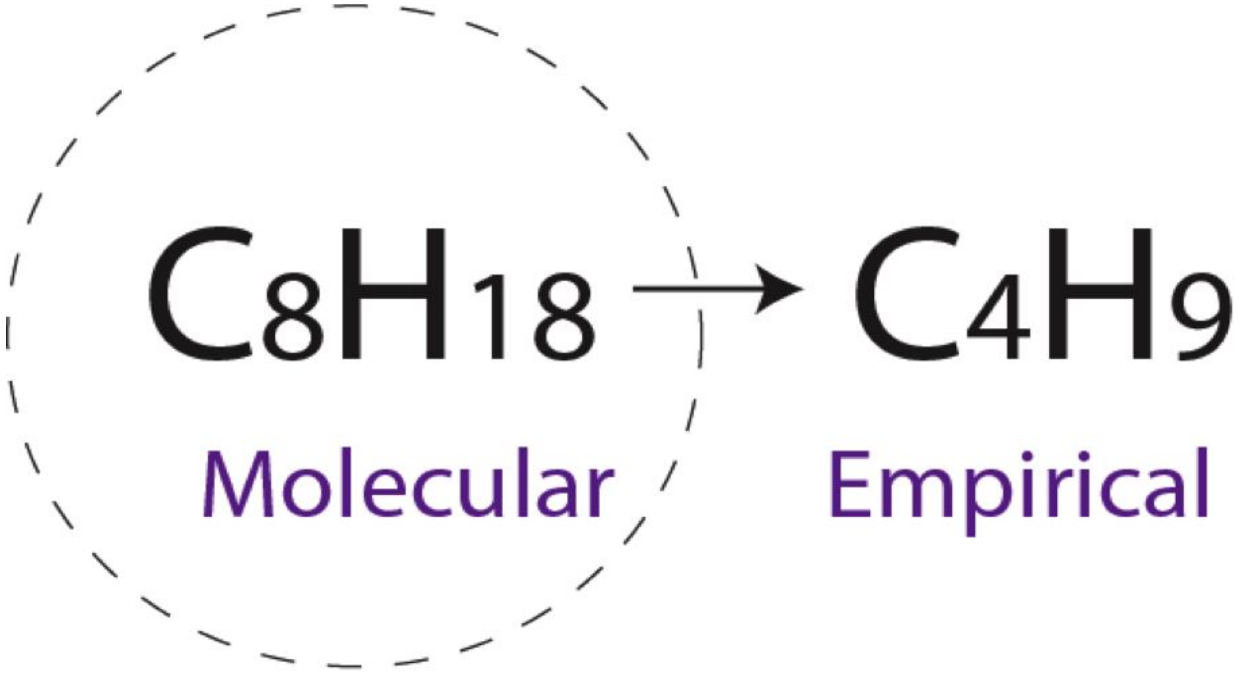
A general expression used to refer to the mass (in grams) of a mole of any substance, expressed as grams per mole, or g/mol.

Empirical formula



A chemical formula with the lowest whole-number ratio of elements in a compound

Molecular formula



A chemical formula of a compound that is the empirical formula of a compound multiplied by a whole-number subscript

Formula mass

Na_2S	Number of Atoms	x	Atomic Mass	=	Total Mass
Na	2		22.99		45.98
S	1		32.07		32.07
FORMULA MASS					78.05

The sum of the atomic masses of ionic compounds

Molecular mass

$C_{12}H_{22}O_{11}$	Number of Atoms	x Atomic Mass	= Total Mass
C	12	12	144
H	22	1	22
O	11	16	176
MOLECULAR MASS			342

The sum of the atomic masses
of molecular compounds