

Molar Mass = M

@wikipedia

Synonym: [Molar Mass](#) = [Molecular Weight](#)

[Material property](#) defined as the [mass](#) of a given [substance](#) ([chemical element](#) or [chemical compound](#)) contained within one [mole](#) of the [substance](#).

Symbol	Dimension	SI units	Oil metric units	Oil field units	Additional
M	$M N^{-1}$	kg/mol	kg/mol	lb _m / mol = 0.453592 37 kg/mol	g/mol = 0.001 kg/mol

It measures as ratio of [substance mass](#) m to [amount of substance](#) ν :

$$M = \frac{m}{\nu}$$

It relates to [molecular mass](#) m_u and [Avogadro constant](#) N_A as:

$$M = m_u \cdot N_A$$
$$M = \frac{m}{\nu} = m \cdot \frac{N_A}{N} = m_u \cdot N_A$$

where

N	number of molecules in a substance of amount ν
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The [molar mass](#) of a [mixture](#) is:

$$M = \sum_k M_k \cdot x_k$$

where

M_k	molar mass of the k-th mixture component
x_k	mole fraction of the k-th mixture component

$$M = \frac{m}{\nu} = \frac{N_A}{N} \cdot m = \frac{N_A}{N} \cdot \sum_k m_{u,k} \cdot N_k = \frac{N_A}{N} \cdot \sum_k \frac{M_k}{N_A} \cdot N \cdot x_k = \sum_k M_k \cdot x_k$$

where

N_k	number of particles in the k-th mixture component
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$N = \sum_k N_k$	total number of particles in mixture
$m_{u,k}$	molecular mass of the particles in the k-th mixture component

See also

[Natural Science](#) / [Physics](#) / [Molecular Physics](#)