

Molar Density (physical property) = m

The [amount](#) of [chemical substance](#) per unit [volume](#):

$$\rho_m = \frac{v}{V} = \frac{\rho}{M} = \frac{1}{V_m}$$

where

V_m	molar volume of a given substance		
V	volume of a given substance	ρ	density of a given substance
v	amount of a given substance	M	molar mass of a given substance

Dimension	SI units	Oil metric units	Oil field units
L^{-3}	m^{-3}	cc^{-1}	ft^{-1}

[Molar Density](#) ρ_m is inverse to [Molar volume](#) V_m :

(1)
$$\rho_m = \frac{1}{V_m}$$

In case of [fluid](#) which satisfies [Real Gas EOS @model](#) the [Molar Density](#) ρ_m can be expressed in terms of [Z-factor](#) $Z(p, T)$:

(2)
$$\rho_m = \frac{p}{ZRT}$$

where

T	temperature
p	pressure
R	gas constant

See also

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

[[Density](#)] [[Molar Mass](#)]