1.2 Classification of physico-chemical quantities into extensive and intensive quantities

A quantity whose magnitude is additive for subsystems is called *extensive*; examples are mass m, volume V, Gibbs energy G. A quantity whose magnitude is independent of the extent of the system is called *intensive*; examples are temperature T, pressure p, chemical potential (partial molar Gibbs energy) μ.

The adjective *specific* before the name of an extensive quantity is often used to mean *divided by mass*. When the symbol for the extensive quantity is a capital letter, the symbol used for the specific quantity is often the corresponding lower case letter.

Examples volume, V
specific volume, $v = V/m = 1/\tilde{n}$ (where $\tilde{n}$ is mass density)
heat capacity at constant pressure, C_p
specific heat capacity at constant pressure, $c_p = C_p/m$

The adjective *molar* before the name of an extensive quantity generally means *divided by amount of substance*. The subscript m on the symbol for the extensive quantity denotes the corresponding molar quantity.

Examples	volume, V	molar volume, $V_m = V/n$
	enthalpy, H	molar enthalpy, $H_m = H/n$

(For definition of n see 1.3.7.)

It is sometimes convenient to divide all extensive quantities by amount of substance, so that all quantities become intensive; the subscript m may then be omitted if this convention is stated and there is no risk of ambiguity.

There are a few cases where the adjective *molar* has a different meaning, namely *divided by amount-of-substance concentration*.

Examples:

absorption coefficient, a - molar absorption coefficient, $\tilde{a} = a/c$

conductivity, κ - molar conductivity, $\Lambda = \kappa/c$