amount of substance, *n*

Base quantity in the system of quantities upon which SI is based. It is the number of elementary entities divided by the Avogadro constant. Since it is proportional to the number of entities, the proportionality constant being the reciprocal Avogadro constant and the same for all substances, it has to be treated almost identically with the number of entities. Thus the counted elementary entities must always be specified. The words 'of substance' may be replaced by the specification of the entity, for example: amount of chlorine atoms, n_{Cl}, amount of chlorine molecules, $n(Cl_2)$. No specification of the entity might lead to ambiguities [amount of sulfur could stand for $n(S)$, $n(S_8)$, etc.], but in many cases the implied entity is assumed to be known: for molecular compounds it is usually the molecule [e.g. amount of benzene usually means $n(C_6H_6)$], for ionic compounds the simplest formula unit [e.g. amount of sodium chloride usually means $n(NaCl)$] and for metals the atom [e.g. amount of silver usually stands for $n(Ag)$]. In some derived quantities the words 'of substance' are also omitted, e.g. *amount concentration*, *amount fraction*. Thus in many cases the name of the base quantity is shortened to amount and to avoid possible confusion with the general meaning of the word the attribute chemical is added. The chemical amount is hence the alternative name for amount of substance. In the field of clinical chemistry the words 'of substance' should not be omitted and abbreviations such as substance concentration (for amount of substance concentration) and substance fraction are in use. The quantity had no name prior to 1969 and was simply referred to as the number of moles.

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