SN1 Lexicon

Often the terms used in chemistry lessons are chosen to make a concept more meaningful to the student. Sometimes these are not the ones that fit the standard designation. For example, the name "orbital shape" is more meaningful than "angular momentum quantum number" which is the correct expression to use.

Therefore, be aware that the standard designations are the ones most often used in a test. The following list is a good start, but it is still incomplete. The student is invited to complete this list with the expression used in the chemistry textbook.

Standard designation	Practical name or expression used in class and definition
(n, ℓ, m_ℓ, m_s)	Quantum numbers used to identify each electron in an atom
a.m.u. u. or Dalton	Mass of one unit of a compound. The symbol a.m.u. is not used anymore.
angular momentum	Shape of the orbital, it correspond to ℓ in quantum numbers (n, ℓ, m_ℓ, m_s)
anion	Negative ion, which are non metal most of the time
binary compound	Compound made of two atoms (HCl) or two groups of atoms ($NaClO_4$)
cation	Positive ion, which are metals most of the time
complete ionic equation	Reactions represented by all the ions present in a reaction $Ag^+(aq) + NO_3^-(aq) + K^+(aq) + Cl^-(aq) \longrightarrow AgCl(s) + K^+(aq) + Cl^-(aq)$
condensed electron configuration	Also named: "noble gas core" electron configuration. ex. [Ar] $4s^2$
dipole moment	VSEPR: Result of the sum of all the dipoles present in a molecule.
dipole-dipole	Intermolecular forces when molecules having a dipole moment are present (often containing N, O, F, Cl)
duet rule	Lewis: specific to H and He: they are stable with $2e^-$ around them.
e^- , p^+, n°	electron, proton, neutron
effective nuclear charge or Z_{eff}	Charge "felt" by an e^- toward the nucleus. $Z_{eff} \leq Z_{nucleus}$ (valence electron)
electron configuration	$1s^2\ 2s^2\ 2p^6$, etc.
electron-pair arrangement	VSEPR: name of the 3D structure based on the position of the e^- pairs.
empirical formula	Smallest ratio of atoms describing a compound.
EN	Electronegativity: most EN atoms are: Br < Cl < N < O < F
enthalpy change	Equivalent to the heat released or absorbed in a reaction or heat transfer.
excited state	When one or several e^- in an atom or ion are not in their ground state.
expanded octet	Lewis: Central atom having more than $8e^-$ to reduce the formal charge or to induce resonance. 2^{nd} period element cannot have an expanded octet.
FC	Formal charges (help to predict the most stable resonance structure)
ground state	When all the e^- in an atom or ion are at their lowest energy orbitals.
group in the periodic table	The family or column (vertical). Fluoride is in the family of the halogens.
highest electron affinity (EA)	The more exothermic value when an extra e^- is added to an atom
hybridization	Orbital "blending" that allows elements to make more bonds.
hydrogen bonding	H-bonding: present when either O−H, N−H or F−H is present
I_1, I_2, I_3	Ionization energies. Some books are using IE_1, IE_2, IE_3, etc.
Inner shells electrons	Core electrons: e^- noble gas configuration in an atom. Ex. Na: **[Ne]** $3s^1$
intermolecular forces	Forces between molecules in liquid and solid state (condensed state)
ionized	To provide enough energy to completely remove an e^-.
Lewis structure	A schematic drawing of a molecule that help to keep track of the e^-
London dispersion forces	Spontaneous creation and short duration of a dipole moment

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lone pairs	Non-bonding electrons in an orbital ($2e^-$ paired together).
magnetic properties (character)	The paramagnetism (paramagnetic or diamagnetic)
magnetic quantum number	m_ℓ: associated to the orientation in space of an orbital.
MO: molecular orbitals	Set of orbitals obtained from the bond between two atomic orbitals
molecular electron configuration	Description of the e^- in an MO: $(\sigma_{1s})^2(\sigma^{2s*})^2(\sigma^{2p})^2(\pi^{2p})^4(\pi^{2p*})^2$ etc.
molecular equation	Balanced reaction describing the transformation of compounds. $AgNO_3(aq) + KCl(aq) \longrightarrow AgCl(s) + KNO_3(aq)$
molecular formula	All the atoms present in a compound (often covalent). Ex. $C_6H_{12}O_6$, C_2H_4
molecular structure (geometry)	VSEPR: name based on the position of the atoms (ex. See-saw)
net ionic equation	Reaction showing only the active species in a chemical reaction $Ag^+(aq) + Cl^-(aq) \longrightarrow AgCl(s)$
octet rule	Lewis: non metal elements are stable when are surrounded by 8 e^-.
ON	Oxidation number (covalent compound) same as oxidation state for ions
orbital designation	Orbital letters: s, p, d, f, ...etc. associated to the quantum number "ℓ".
orbital diagrams	Representation of the orbitals of an atom using "boxes"
oxidation-reduction reaction	Redox reaction: exchange of electron (change of the ON values)
oxidized	A species (often a reactant) that has lost an electron(s)
oxidizing agent	An oxidant: The reactant that takes the electron
paramagnetic	Attracted by a magnetic field (when there is an unpaired e^- in an orbital)
period (periodic table)	The row number: ex. Zinc is in the period 4 of the periodic table
phase change	Change of the state of matter (solid to liquid, etc.)
polar arrow	Direction of a dipole (pointing toward the negative part of the bond)
polar bond	Present in any bond made up of two atoms of different EN ($0.4 < \Delta EN$)
principal quantum number	The n value in (n, ℓ, m_ℓ, m_s)
radius	Size of an electron or an atom
reduced	A species (often a reactant) that has gained electron(s)
reducing agent	A reducer: The reactant that gives its electron
resonance	LEWIS: structure having more than 1 solution (same molecular structure)
Rxn	acronym for "Reaction" ex: ΔH_{Rxn} = change of enthalpy of a reaction
shell	All the orbitals starting with a specific n value. ex. Shell n=3 (3s, 3p, 3d)
skeletal structure	Arrangement (order of the connections) of the atoms in a molecule
spectator ions	Present to balanced the charges. They do not "participate" in the reaction $NaOH + HCl \longrightarrow H_2O + NaCl$. $Na^+(aq)$ and $Cl^-(aq)$ are spectator ions
state of matter	In an equation, the state of the reactant and products (s, ℓ, g, aq)
sublimation	Direct phase change from solid $\longrightarrow$ gas (no intermediate state)
subshell	To identify a group of orbital. ex. 3d shell = all the five 3d orbitals
trends	General behavior associated to a group of elements (periodic table)
trivial name	Simplified name given to a compound: H_2O = water, NH_3 = ammonia
valence electrons	e^- having the highest n values. ex. Se: [Ar] $\mathbf{4s^2}$ $3d^{10}$ $\mathbf{4s^4}$ so 6 valence e^-
VSEPR	Valence Shell Electron Pairs Repulsion (3D arrangement of the e^-