

Mnemonic Devices for the Awesomeness that is Chemistry

I. Electrochemistry

LEO (Loss of Electrons Oxidation) the **LION** (Loss Increases Oxidation Number) says **GER** (Gain of Electrons is Reduction)

VAN-(Voltaic (cell) Anode Negative)

RED CAT -(Reduction happens at the cathode)

AN OX - (Oxidation at the Anode)

Plate the Red Cat (in electroplating, the cathode, which is reduced, is the object to be plated)

FAT CAT (electrons) flow **Anode** to **CAThode**

II. Acids and Bases

Electrolytes- **ABS** (acids, bases and salts)

BAAD (bases accept H^+ , acids donate H^+)

ATE/IC/ITE/OUS

The disease you get when you try to name your oxyacids.

AA- Add Acid to Water

III. Bonding

BARF – **break** (a bond), **Absorb** (energy), **Release** (energy), **Form** (a bond)

SNAP - **Symmetrical (molecule) Nonpolar Asymmetrical (molecule) Polar**

TICS -**Transfer Ionic, Covalent Share**

"Hydrogen bonding is **FON**." My kids seem to love that one!

I Can't Handle Dirty Vans - (Ionic, Covalent, Hydrogen, Dipole, Van der Waals – strength of bonds and intermolecular forces from strong to weak)

HONC 1234 (# of bonds for each of those elements)

IV. Gas Laws

PLIGHT for conditions when a gas will behave more ideally. **Pressure Low Ideal Gas High Temp**

PTV (Any two letters that touch are directly related, if they do not touch they are indirectly related)

STP- **Standard Temperature and Pressure**

V. Organic

S,S,S- Single Bonds, Saturated, Substitution

AMU- Addition, Multiple Bond Unsaturated

Aldehydes (functional group) are on the sides!

Ester luvvvs perfume. They are smelly.

Ester- was the naughty girl who mixed Acid and Alcohol

VI. Kinetics and Equilibrium

exo, (heat)exits released

endo, heat enters or is absorbed

VII. General

CEM- Charge,Energy, and Mass. (What is conserved in a chemical reaction)

MAN

Mass (#) minus **A**tom**N**umber = # of **N**eutrons

APE

Atoms (have) = **P**roton # = **E**lectron # Atoms are electrically Neutral

NNAP -

Nucleus = **N**eutrons and **P**rotons

BrINCIHOF (diatomic elements, nonpolar bonds) **or**

Gen-u-one diatomic elements. All end in **gen** or **ine**

KHD(MLG)DCM – King Henry’s Drunk Uncle Drank Chocolate Milk

Kilogram Hecto Deca (Meter-Liter-Gram) Deci Centi Milli

MAD (multiply, add, divide by 100 – average atomic mass)

SPLash (for molecular/covalent substances – soft, poor conductor, low MP/BP)

CIA, TIA, PIL (LeChatelier’s Principle)

Roy Hates To Order Fries (for half life problems – Radioisotope, Half life, Total time, Original mass, Final mass)... if you're given 2 times, divide them... if you're given 2 masses, do arrows.

Endo – energy on left (N comes first alpha), Exo – energy on right (X comes last alpha)

Vaporization – boil, evaporate, vaporize, condense

Fusion – freeze, melt, solidify, crystallize

Sublimation – $S \rightarrow G$

Deposition – $G \rightarrow S$

$S \rightarrow L \rightarrow G$ endo

$S \leftarrow L \leftarrow G$ exo

“mobile sea of electrons” metallic bonding

$\alpha \rightarrow \beta \rightarrow \gamma$ least to most penetrating (alpha, beta, gamma)

Complete combustion makes CO_2 , incomplete combustion makes CO.

Subscript... ctrl + ^{see?} Then hit ctrl + to get rid of it.

Superscript... ctrl shift + ^{see?} Then hit ctrl shft + to get rid of it.

Arrow – hyphen hyphen greater than \rightarrow or less than hyphen hyphen hyphen \leftarrow

Fission (splIt), Fusion, Unite

Fission – Uranium, Fusion – H or He

Heating curve – horizontal PE change, no KE change, slope KE change, no PE change

Atlantic-Pacific rule for counting sig figs

HOH = H_2O