

Mnemonic Devices for the Awesomeness that is Chemistry

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

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

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)

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

Organic

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

AMU- Addition, Multiple Bond Unsaturated

Aldehydes (functional group) are on the sides!

Ester luuuv perfume. They are smelly.

Ester- was the naughty girl who mixed Acid and Alcohol

Kinetics and Equilibrium

exo, (heat)exits released

endo, heat enters or is absorbed

General

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

MAN

Mass (#) minus Atomic Number = # of Neutrons

APE

Atoms (have) = Proton # = Electron # Atoms are electrically Neutral

NNAP -

Nucleus = Neutrons and Protons

BrINClHOF (diatomic elements, nonpolar bonds) or

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

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

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

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 CO₂, incomplete combustion makes CO.

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 = H₂O