

Organic Chemistry

NCEA
Level 2

Study Map by The Science Scribe

Scheme Notes

- Alkyne to alkene to alkane: use H_2/Pt
- Conc. H_2SO_4 is a *dehydrating* agent. It removes water (removes OH, and H).
- OH^- aqueous for haloalkanes to alcohols. OH^- alcoholic for haloalkanes to alkenes.
- MnO_4^- and $Cr_2O_7^{2-}$ are oxidising agents. Primary and secondary alcohols oxidise. At level two, equations are limited to primary alcohol oxidation.
- Caution: amines are $-NH_2$ and ammonia is NH_3 . This is not a printing error.
- $SOCl_2$, PCl_3 and PCl_5 are chlorinating agents. They put "Cl" on things...

Classification of Alcohols



Primary (1°) alcohols: the carbon atom with the OH group is only bonded to one other carbon atom.

Secondary (2°) alcohols: the carbon atom with the OH group is only bonded to only two other carbon atoms.

Tertiary (3°) alcohols: the carbon atom with the $-OH$ group is only bonded to only three other carbon atoms.

Isomerism

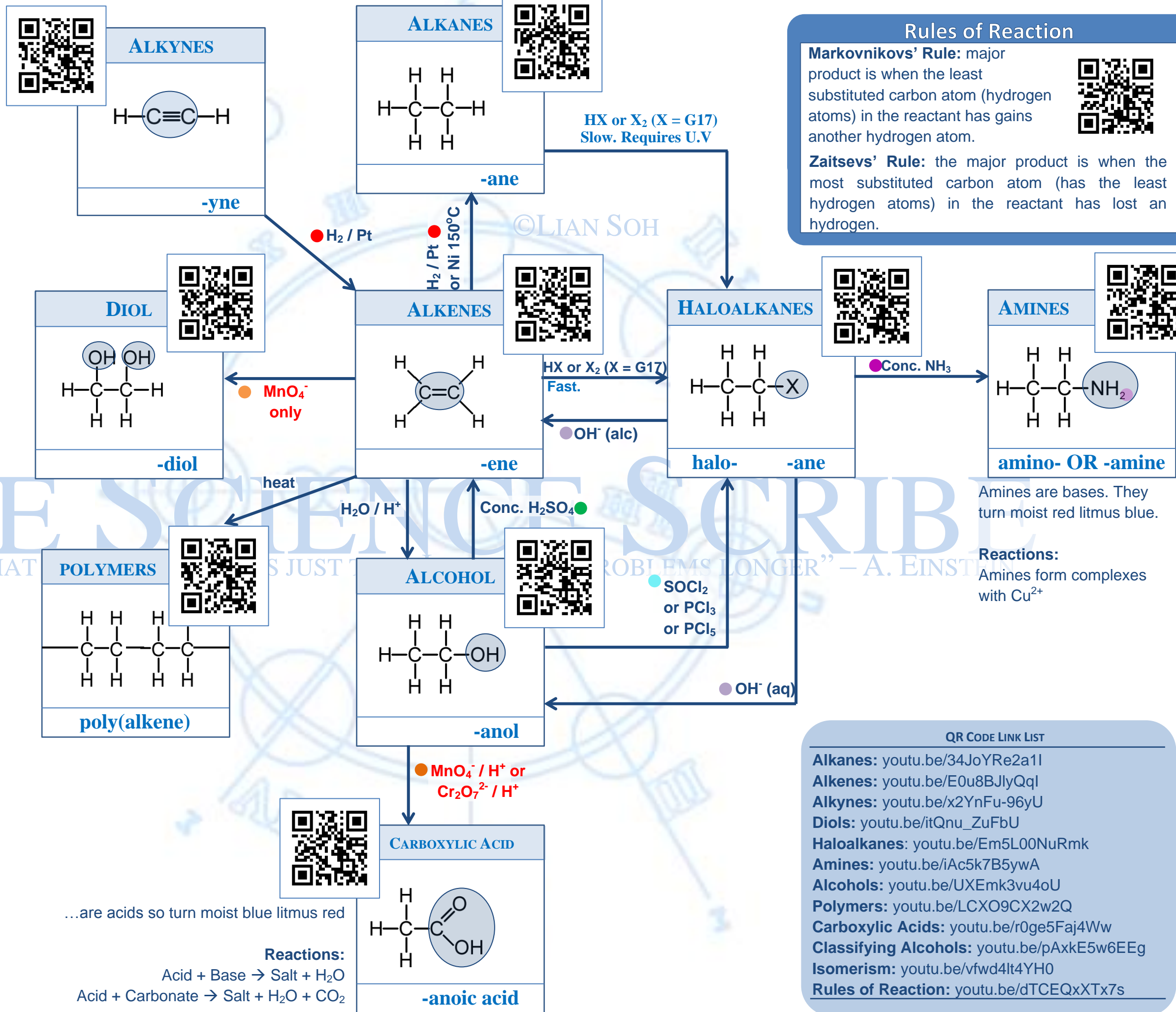


Structural (Constitutional): same molecular formula but different bonding sequence of atoms.

Geometric: same molecular formula, structural formula appears identical, but arrangement of atoms in space is different.

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Rules of Reaction

Markovnikovs' Rule: major product is when the least substituted carbon atom (hydrogen atoms) in the reactant has gains another hydrogen atom.

Zaitsevs' Rule: the major product is when the most substituted carbon atom (has the least hydrogen atoms) in the reactant has lost an hydrogen.

Amines are bases. They turn moist red litmus blue.

Reactions:
Amines form complexes with Cu^{2+}

QR CODE LINK LIST

- Alkanes:** youtu.be/34JoYRe2a1I
- Alkenes:** youtu.be/E0u8BJlyQqI
- Alkynes:** youtu.be/x2YnFu-96yU
- Diols:** youtu.be/itQnu_ZuFbU
- Haloalkanes:** youtu.be/Em5L00NuRmk
- Amines:** youtu.be/iAc5k7B5ywA
- Alcohols:** youtu.be/UXEmk3vu4oU
- Polymers:** youtu.be/LCXO9CX2w2Q
- Carboxylic Acids:** youtu.be/r0ge5Faj4Ww
- Classifying Alcohols:** youtu.be/pAxkE5w6EEg
- Isomerism:** youtu.be/vfwd4lt4YH0
- Rules of Reaction:** youtu.be/dTCEQxXTx7s