

Alkanes = paraffines **alkenes = olefins** **aromatic hydrocarbons** = stuff with benzene
Ethane = ethylene **propene = propylene** **stereoisomerism** – geometric/optical
Cis – horizontal **trans** – crisscross **optical isomerism** – 4 DIFFERENT atoms to 1 carbon (chiral C atom)
Ethyne – acetylene **alkyl groups** – methyl, ethyl, etc **strained** – weak bonds in cyclic stuff
Homologous series – each member differs from the next by CH₂ (Alkanes are homologous)
Boat/Chair – 2 isomers of cyclohexane that has no strain **H₂O add 1 H, 1 OH**
Ortho/meta/para – 1, 2, or 3 atoms away from the 1st **phenyl** – benzene ring as attachment
Markovnikov's rule – hydrogen goes on the carbon with the most hydrogens attacked
Halogen Derivatives – Chloro, Bromo, Fluoro, Iodo **Phenol** – alcohol attached to benzene
Methanol = methyl alcohol **carbinol group** = C – OH **Carbinol Carbon** = the C
Tertiary alcohol – OH attached to a carbon with 3 other carbons attached
 Primary Alcohol becomes aldehyde Keep oxidizing to make ketones and carboxylic acids
 Secondary alcohol becomes ketone
 Tertiary alcohol doesn't react **Polyhydroxy** – 2 or more alcohols

Carbonyl Group = C = O. C+ and O-, turns into ionic group

Aldehydes – “al” ending, C=O on the END

Alcohols – “ol” ending, O – H

Ethanoic Acid = acetic Acid

Acids – “oic” ending, C=O – OH

Keytone – “one” ending, C = O in the middle

Ester – “ate” ending, R – C = O – O – R', combo of an Acid and an Alcohol

Ether – “ether” ending, O in the middle

Amine – “amino + name or Alkyl group + amine” NH₂, or NH with 2 R's

1 R = primary

2 R's = secondary

3 R's = tertiary

Amide – “name + amide”, C = O – NH₂ Combo of an Acid and an Amine

Peroxide = 2 O's

Monomers – a single piece of a polymer

Addition polymers – using a driving agent, breaking up double bonds (free radicals) and created polymers

Condensation polymers – polymers who join by losing H₂O, used to form esters and amides

Pi bond Shapes – 2 = Linear 3 = boomerang 4 = Y Shaped

Polymerization – to take monomers to form polymers by condensation or addition

Initiation – a double or triple bonded atom is “attacked” by a free radical

Propagation – the free radical breaks the double bond, creates another free radical to attack another molecule

Termination – the free radical encounters another free radical, and they bond, and the chain stops

Free Radical – a lone electron in a half filled orbital

Questions

Why do you need two difunctional monomers for condensation? Isn't it just acid + alcohol?

Page 862, what's the p for in dichlorobenzene?

Page 854, how many isomers does cyclopentene have? 1,3, cyclopentadiene?

Why are free radicals attracted to double bonds?