

Hydrocarbons
 oxygen-containing groups
 Nitrogen containing group
 sulfur containing group

$C-C$ **Alkane** ("ane" looks like "one")

$C=C$ **Alkene** ("ene" think benzene w/ π bonds)

$C\equiv C$ **Alkyne** ("yne" ... y not 3)

$R-OH$ **Alcohol** (ol ... close to -OH)

$\begin{array}{c} O \\ || \\ R-C-H \end{array}$ **Aldehyde** (-al loves O + hydro likes H)
 (π) (σ)

$\begin{array}{c} O \\ || \\ R-C-R' \end{array}$ **Ketone** (like to keep π bond w/ O)

$\begin{array}{c} O \\ || \\ R-C-OH \end{array}$ **Carboxylic Acid** (Carbon + ox(O) + Acid \rightarrow OH)
-oic acid

$\begin{array}{c} O \\ || \\ R-C-OR' \end{array}$ **Ester** (Easter egg (=O) + (OR) candy)
-oxy-ane

$R-O-R'$ **Ether** (Either OR (2 r's))
-ene oxide

$\begin{array}{c} R' - N - R'' \\ | \\ R''' \end{array}$ **Amine** (amine? 3 r + N)

$\begin{array}{c} O \\ || \\ R-C-NH_2 \end{array}$ **Amide** (Amy would di w/out π or NH_2)

$R-C\equiv N$ **Nitrile** (3 vowels = $C\equiv N$)

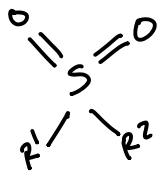
$\begin{array}{c} R^3 \\ | \\ R^1 - C = N \\ | \\ R^2 \end{array}$ **Imines** (2 I = C=N; $N=3$ bonds + $C=4$)
 (2) (R^1-2)

$\begin{array}{c} O \\ || \\ R-C-N-R \\ | \quad | \\ R \quad R \end{array}$ **Imide** (symmetrical, ide = π oxy. \rightarrow +3R)

$R-SH$ **Thiol** (thiol = SH)

$\begin{array}{c} R^2 \\ \diagdown \\ S \\ \diagup \\ R^1 \end{array}$ **Sulfide** (Selfish ... 2 R's)

$\begin{array}{c} R^1 - S - S - R^2 \end{array}$ **Disulfide** (... 2 S)



Sulfone

(if you divide horizontally it looks like a rotary phone) ... kinda



* Remember the 5, 10, 15, 20 Rule * * The lower the pKa the more acidic *
 - carboxylic acid: pKa \rightarrow 5
 - phenol: pKa \rightarrow 10
 - alcohols: pKa \rightarrow 15
 - alpha H from carbons: pKa \rightarrow 20