**MP** A mini (e.g. small)-polar or multi-polar compound: It is therefore water soluble. The ratio of polar groups to carbons plus halogens is normally 1:4 or less (e.g. 1:2). Note polar groups include alcohols and ethers as well as most of the functionalities you will meet during the remainder of the semester. Polar groups also include acidic and basic functions such as amines, carboxylic acids and phenols.

**OA** Obesamine: A non-water soluble amine (ratio of carbons plus halogens to amines plus other polar groups is usually greater than 5:1).

**CA** Corpulent Acid: A non-water soluble Carboxylic Acid (above standard applies).

**BP** Blobby Phenol: A non-water soluble Phenol (above standard applies).

**GK** Greasy Kid Stuff: A non-water soluble neutral compound. A neutral compound with too high a ratio of fat (carbons plus halogens) to neutral polar groups (usually greater than 5:1).

Alkylamine + CA are incompatible
Liquid/Liquid Extraction of Organic Compounds

- **Carboxylic Acid**:
  - (greasy)\(\text{R-CH}_2\text{COOH}\) → \(\text{NaHCO}_3\) → \(\text{R-CH}_2\text{COONa}^+\) (carboxylate salt, water soluble)
  - \(\text{HCl}\) → water insoluble carboxylic acid

- **Phenol**:
  - \(\text{ArOH}\) → \(\text{NaOH}\) → \(\text{ArO}^-\text{Na}^+\) (phenoxide salt, water soluble)
  - \(\text{HCl}\) → water insoluble phenol

- **Amine**:
  - \(\text{(greasy)R-NH}_2\) → \(\text{HCl}\) → \(\text{R-NH}_3^+\text{Cl}^-\) (ammonium salt, water soluble)
  - \(\text{NaOH}\) → water insoluble amine

(Also for secondary and tertiary amines)
Liquid/Liquid Extraction of Organic Compounds

**MP** = mini or multipolar compound *(water soluble)*

for example:

\[
\begin{align*}
&\text{HO-C-CH}_2\text{-CH}_2\text{-C-OH} \\
&\text{Br} \quad \text{Cl}
\end{align*}
\]

**CA** = corpulent acid *(water insoluble carboxylic acid)*

\[
\begin{align*}
&\text{Br} \\
&\text{O} \\
&\text{H}
\end{align*}
\]

**BP** = blobby phenol *(water insoluble phenol)*

\[
\begin{align*}
&\text{HO} \\
&\text{Cl}
\end{align*}
\]

**OA** = obesamine *(water insoluble amine)*

\[
\begin{align*}
&\text{H} \\
&\text{Cl}
\end{align*}
\]

**GK** = greasy kid stuff *(water insoluble neutral compound)*

\[
\begin{align*}
&\text{Br} \\
&\text{OH}
\end{align*}
\]