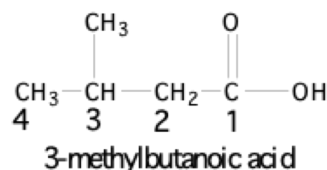


Naming Carboxylic Acids, Esters and Amides – Chem 30B

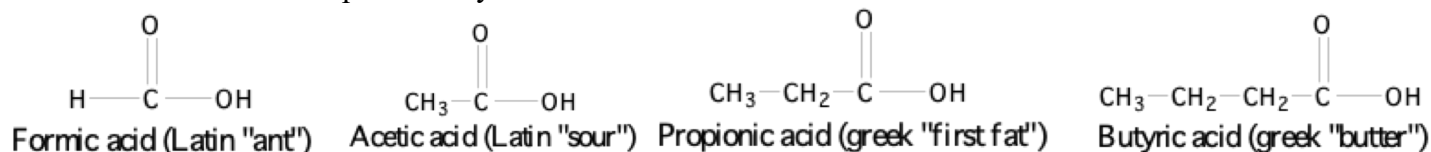
Carboxylic Acids

The IUPAC names of carboxylic acids

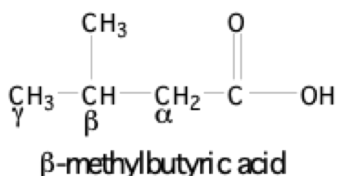
- Replace the *-e* in the alkane name with *-oic acid*.
 CH_4 methane HCOOH methanoic acid
 $\text{CH}_3\text{—CH}_3$ ethane $\text{CH}_3\text{—COOH}$ ethanoic acid
- Number substituents from the carboxyl carbon (#1).
- Extra carbonyl groups present are called *-oxo*.
- Other alcohol groups *—OH* are known as *-hydroxyl*



The common names of simple carboxylic acids are:



- Locate substituents using α , β , γ (letters of the greek alphabet) for the carbon atoms adjacent to the carboxyl carbon.

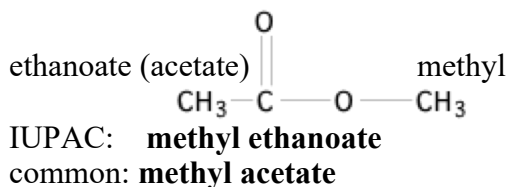


- Dicarboxylic acids contain two *—COOH* groups and they end with *-dioic acid*.
- Unsaturated acids are named (IUPAC system) with the ending *-enoic*.

Esters

The name of an ester contains the names of

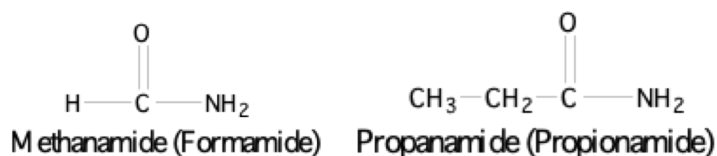
- The alkyl group from the alcohol.
 - The carbon chain from the acid with *-ate* ending.
- from alcohol from acid



Amides

Amides are named as alkanamides.

- IUPAC replaces *-oic acid* ending with *-amide*.
- Common names replace *-ic acid* ending with *-amide*.



- An alkyl group bonded to the N atom is named as *N*-alkyl in front of the amide name. (Use *N,N*- if two identical groups are attached.)

