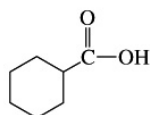
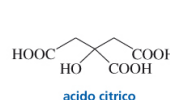
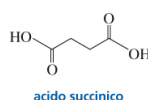
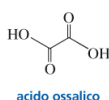
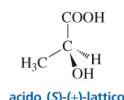
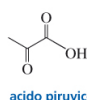
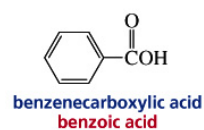
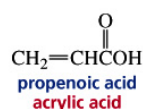
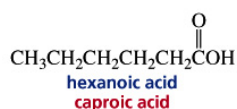
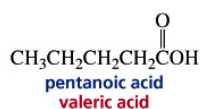
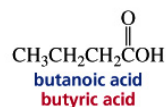
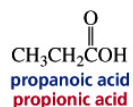
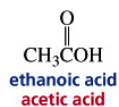
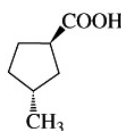


Nomenclature of Carboxylic Acids

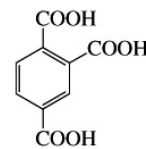
(IUPAC: **alkan**oic **acid**)



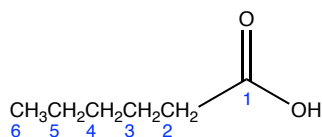
cyclohexanecarboxylic acid



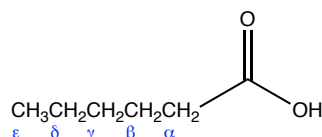
trans-3-methylcyclopentanecarboxylic acid



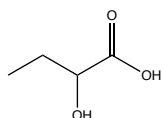
1,2,4-benzenetricarboxylic acid



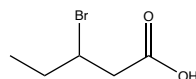
IUPAC name



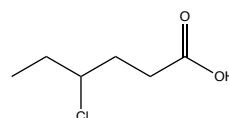
common name



Systematic name: 2-hydroxybutanoic acid
 Common name: α-hydroxybutirric acid



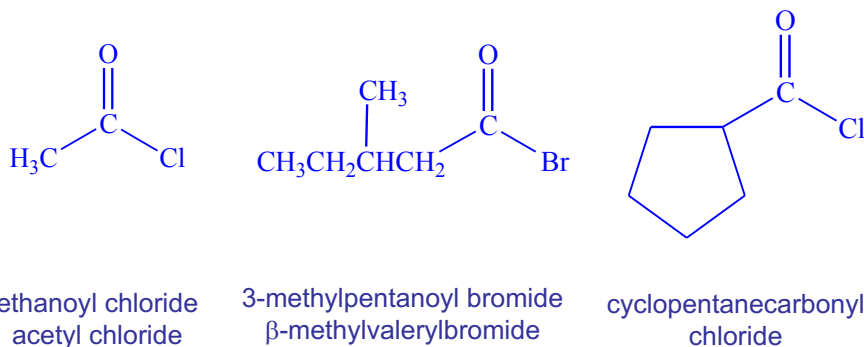
3-bromopentanoic acid
 β-bromovaleric acid



4-chlorohexanoic acid
 γ-chlorocaproic acid

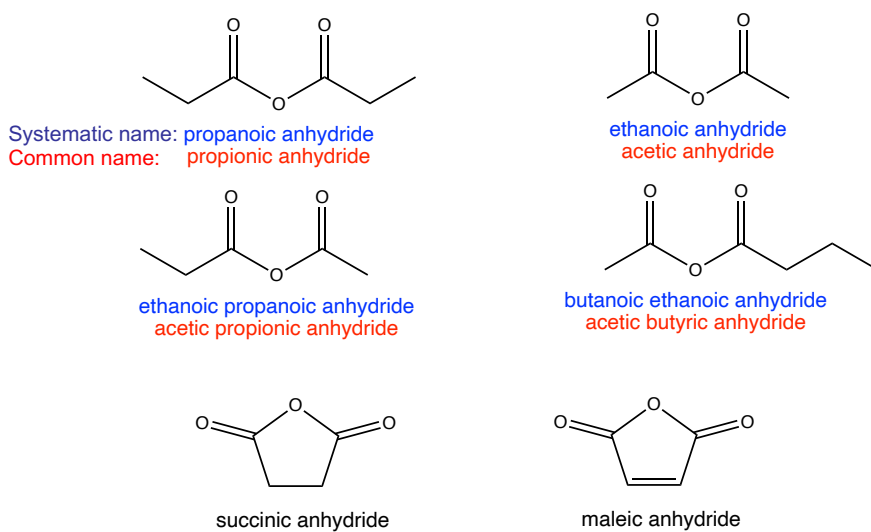
Acyl Halides

(IUPAC: **alkanoil** halide)



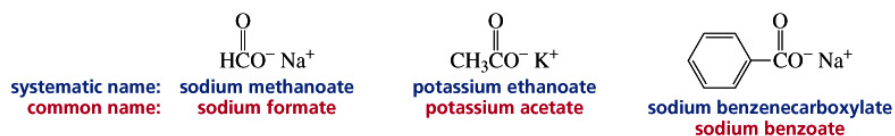
Acid Anhydrides

(IUPAC: **alkanoic** anhydride)



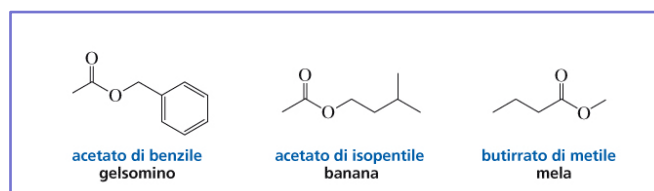
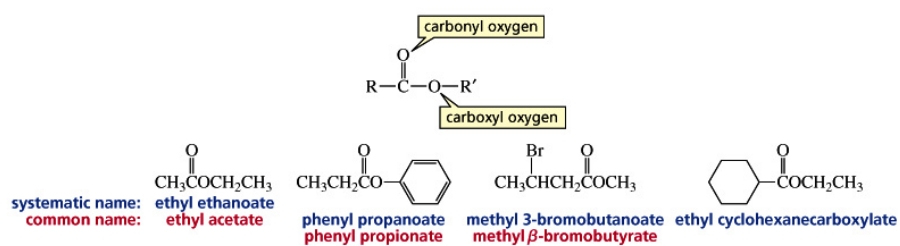
Salts of Carboxylic Acids

(IUPAC: **alkanoate**)



Esters

(IUPAC: **alkyl alkanoate**)



Lactones

(IUPAC: 2-oxa **cycloalkanone**)

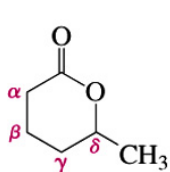
IUPAC:

3-methyl-2-oxacyclobutanone

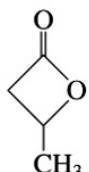
3-ethyl-2-oxacyclopentanone

3-methyl-2-oxacyclohexanone

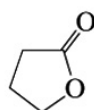
2-oxacyclopentanone



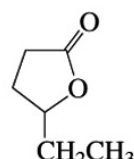
δ-caprolactone



β-butyrolactone



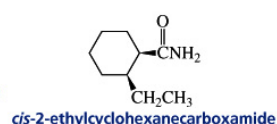
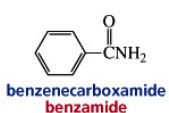
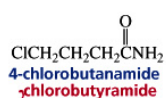
γ-butyrolactone



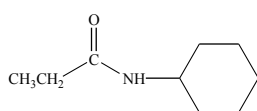
γ-caprolactone

Amides

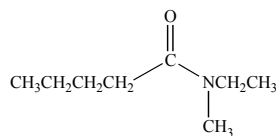
(IUPAC: **alkanamide**)



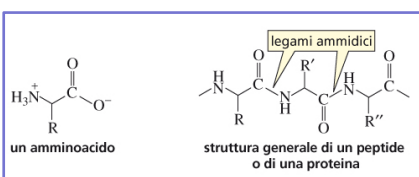
Amides with Substituent(s) Bonded to the Nitrogen



N-cyclohexylpropanamide

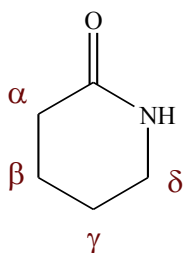


N-ethyl-N-methylpentanamide

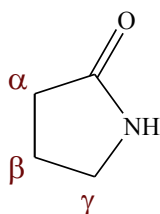


Lactams

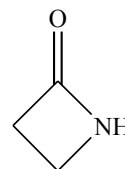
(IUPAC: 2-aza cycloalkanone)



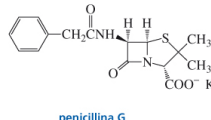
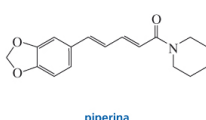
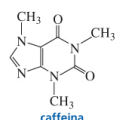
2-azacyclohexanone
δ-valerolactam



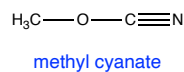
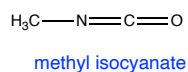
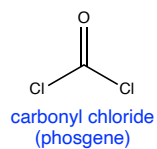
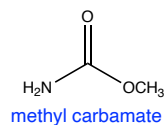
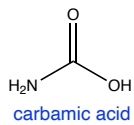
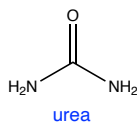
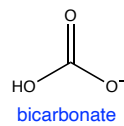
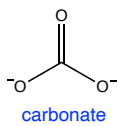
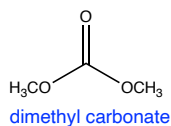
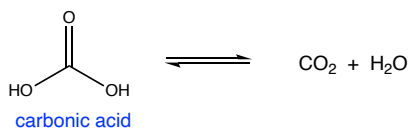
2-azacyclopentanone
γ-butyrolactam



2-azacyclobutanone
β-propiolactam

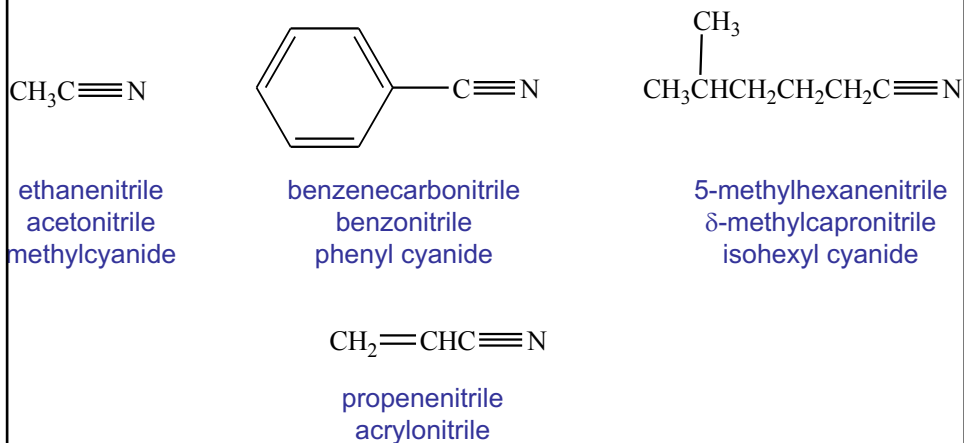


Carbonic Acid Derivatives



Nitriles

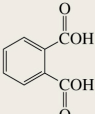
(IUPAC: **alkanenitrile**)



Dicarboxylic acids

(IUPAC: **alkanedioic acid**)

Table 17.2 Structures, Names, and $\text{p}K_{\text{a}}$ Values of Some Simple Dicarboxylic Acids

Dicarboxylic acid	Common name	$\text{p}K_{\text{a}1}$	$\text{p}K_{\text{a}2}$
HOOCH	Carbonic acid	3.58	6.35
$\text{HOOC}-\text{COOH}$	Oxalic acid	1.27	4.27
$\text{HOOCCH}_2\text{COOH}$	Malonic acid	2.86	5.70
$\text{HOOCCH}_2\text{CH}_2\text{COOH}$	Succinic acid	4.21	5.64
$\text{HOOCCH}_2\text{CH}_2\text{CH}_2\text{COOH}$	Glutaric acid	4.34	5.27
$\text{HOOCCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{COOH}$	Adipic acid	4.41	5.28
	Phthalic acid	2.95	5.41

readily lose water when heated if they can form a cyclic anhydride with a five- or a six-membered ring