

Esters

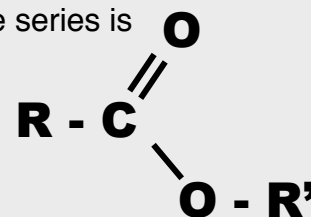
Esters

- A ester is a hydrocarbon derivative that contains a carbon that has a **double bonded oxygen** as well and a **single bonded oxygen**.
- Here the functional groups is sandwiched between two carbon chains.
- The carbon containing the functional group is said to have an ester linkage.

IUPAC Names

5C- ____ yl pentanoate 9 C- ____ yl nonanoate
 4C- ____ yl butanoate 10 C- ____ yl decanoate

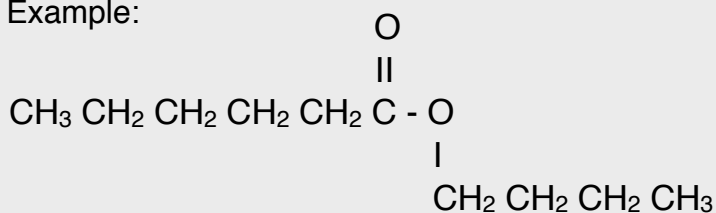
- The general formula for the series is



Naming Esters

- 1) Identify the base number of carbons.
 - The base is the longest continuous chain of carbons that is linked to the **double bonded oxygen**.
 - Use the number of carbons as a prefix before the suffix **-oate**.
- 2) Since the double bonded O is always at the end, it's location doesn't have to be provided. The carbon that contains the carboxyl group is always carbon 1.
- 3) Name any additional side chains off the base chain.
- 4) The chain of carbons off the **single bonded oxygen(R')** is named as a side chain according to the number of carbons it contains followed by **-yl**.

Example:



Answer: butyl hexanoate

Drawing Esters

- 1) Start by drawing the base chain attached to the double bonded oxygen. Draw the number of carbons as indicated by the prefix.
- 2) Add any additional side chains to the base chain as indicated.
- 3) Add the R' group to the single bonded oxygen.
- 4) Add any indicated side chains.
- 5) Saturated the remaining carbons

Example: ethyl 2-methylhexanoate

Answer:

