structural representation

MOLECULAR FORMULA

The molecular formula of an organic compound simply shows the number of each type of atom present. It tells you nothing about the bonding within the compound.

$C_4H_8O_2$

EMPIRICAL FORMULA

The empirical formula of an organic compound gives the simplest possible whole number ratio of the different types of atom within the compound.

C_2H_4O

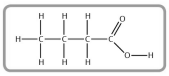
CONDENSED FORMULA

The condensed formula is also text-based; here, each carbon atom is listed separately, with atoms attached to it following. An exception is cyclic parts of molecules, e.g. benzene, where the carbons are grouped.

$CH_3CH_2CH_2COOH$

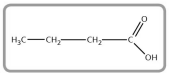
DISPLAYED FORMULA

A displayed formula shows all of the atoms and all of the bonds present in an organic compound. The bonds are represented as lines.



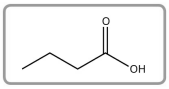
STRUCTURAL FORMULA

Similar to displayed formula - not all bonds are shown, although all atoms are still indicated using subscript numbers. Carbon hydrogen bonds are often simplified.



SKELETAL FORMULA

In a skeletal formula, most hydrogen atoms are omitted, and line ends or vertices represent carbons. Functional groups and atoms other than carbon or hydrogen are still shown. Easiest to draw & commonly used.



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