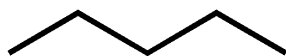


# Compounds with the Same Formula

Compounds that have the same molecular formula but differ in physical and/or chemical properties are known as isomers.

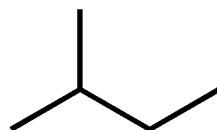
Isomers that differ in connectivity are known as constitutional isomers.

## The constitutional isomers of pentane

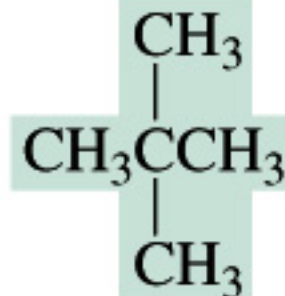


**pentane**

(or *n*-pentane)



**isopentane**

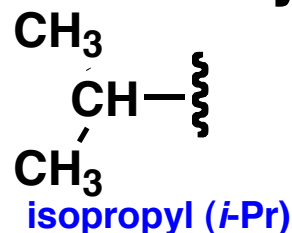


**neopentane**

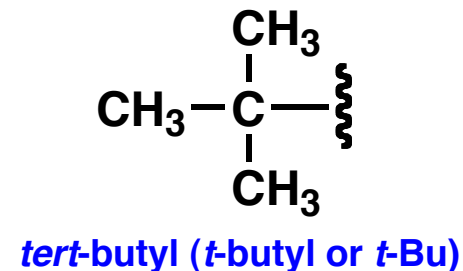
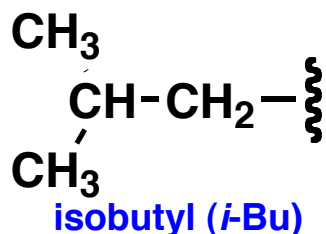
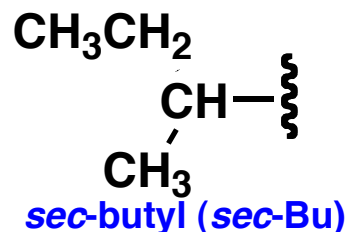


# Important Alkyl Structural Units

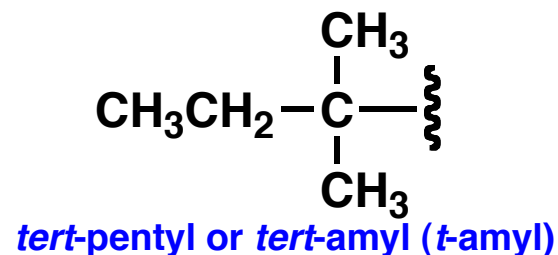
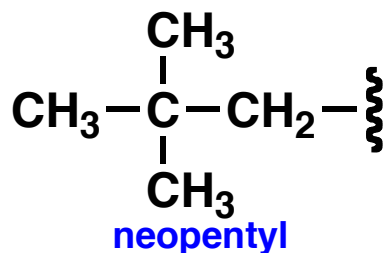
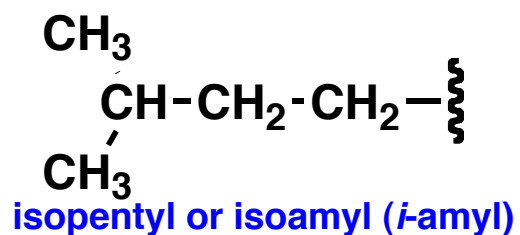
## 3-carbon alkyl groups



## 4-carbon alkyl groups

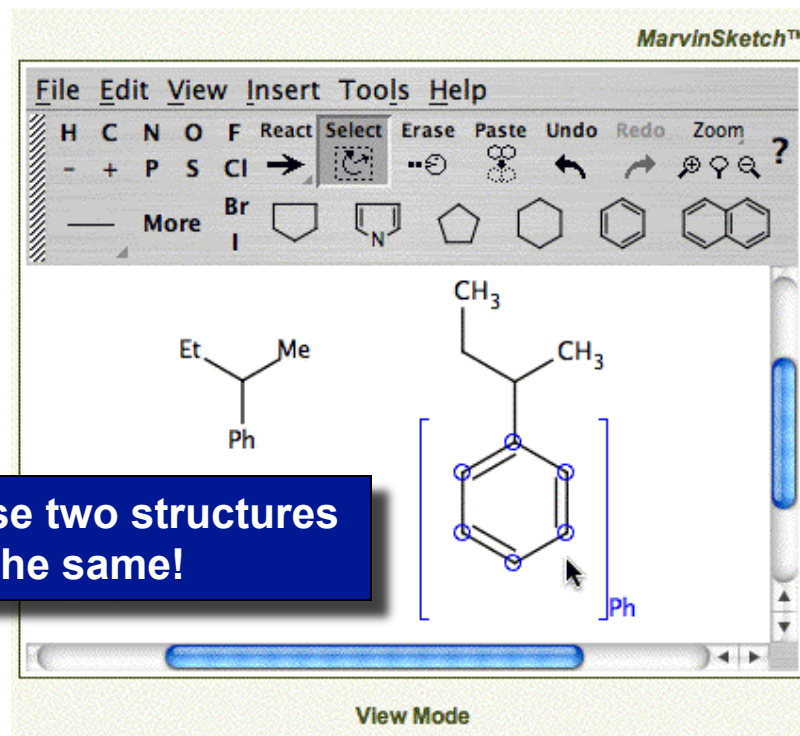


## 5-carbon alkyl groups



# Abbreviated Groups

Chemists often use text abbreviations as shortcuts in chemical drawing. To quickly draw and interpret organic structures, you too will want to know some of the common abbreviations, and you'll want to learn to decode any abbreviation that's not familiar to you. A few of the common abbreviations are shown below. The text below gives instructions about using and expanding (i.e., decoding) abbreviations in MarvinSketch.



**Insert an abbreviated group** into your sketch: type the name of the abbreviation, to complete a longer name, press ENTER or END after typing the first few characters. If the cursor was placed over an atom, it will be automatically changed to the abbreviated group. If no atom was selected, the abbreviation is placed on the cursor. Click on the canvas to place it.

You can retrieve the hidden structure from the text abbreviation with the "Expand" function and hide the structure with the "Contract" function. A short animation about abbreviated groups is available: [http://www.chemaxon.com/anim/marvin/sketch\\_groups/expand\\_ungroup.html](http://www.chemaxon.com/anim/marvin/sketch_groups/expand_ungroup.html)