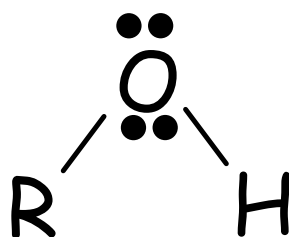


## Alcohols and Ethers

An alcohol is an organic compound with an -OH group.



Aliphatic alcohols can be classified into structural categories according to the number of carbons attached to the carbon with the hydroxyl group.

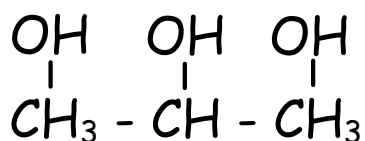
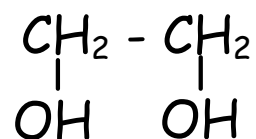
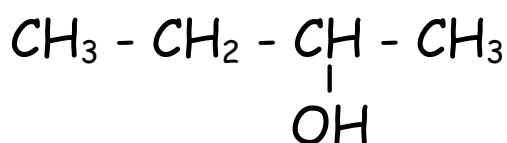
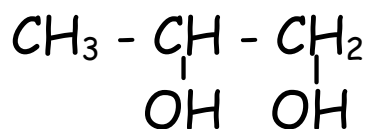
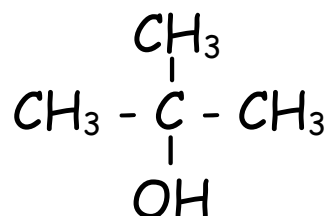
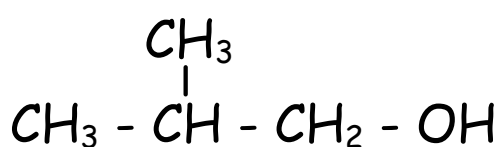
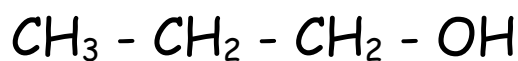
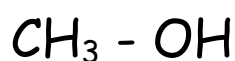
To name alcohols, drop the 'e' ending from the alkane group and add in 'ol'

The parent chain is the longest chain of carbons that has -OH as a substituent. In numbering the chain, the position of the hydroxyl group is given the lowest possible number.

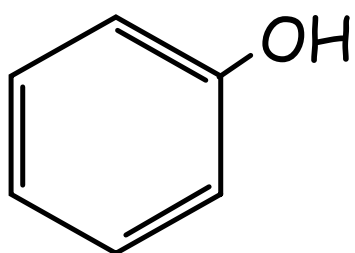
Alcohols containing 2, 3, and 4 -OH substituents are named diols, triols, and tetrols.

# Practice

What is the IUPAC name for each of these alcohol compounds?



When a benzene ring is attached to a hydroxyl group its IUPAC name would be benzenol.



*benzenol*

## Properties of Alcohols

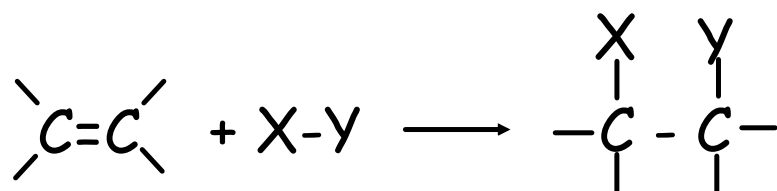
Because alcohols are derivatives of water, they are somewhat soluble.

Alcohols of up to 4 carbons are soluble in water, in all proportions. The solubility of alcohols when greater than 4 carbons is lower.

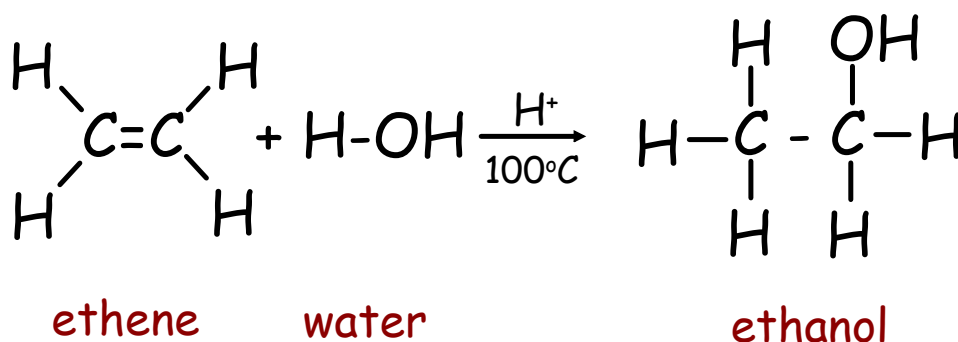
Take a moment and read through the rest of the **Properties of Alcohols** section on page 732 and 733. Make notes of any interesting topics.

## Addition Reactions

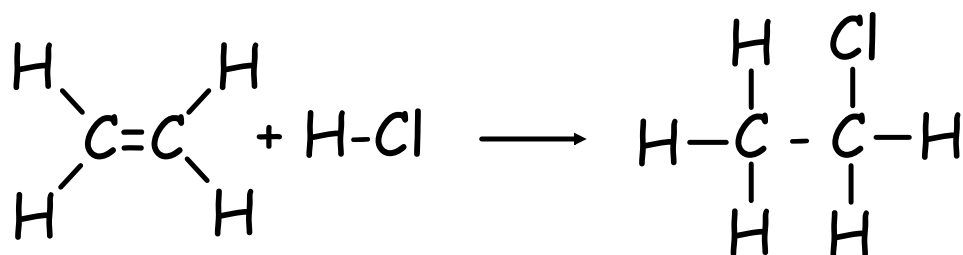
Addition reactions are a method to introduce new functional groups. Alkene groups will break apart easier than alkane groups.



The addition of water to an alkene is a **hydration reaction**.



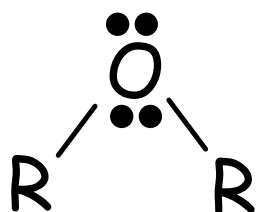
Halogens can be added this way as well as hydrogen compounds.



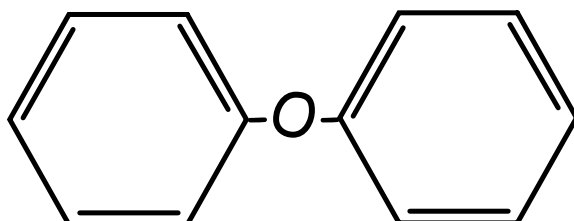
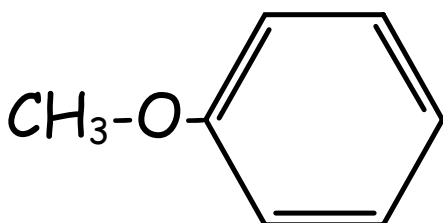
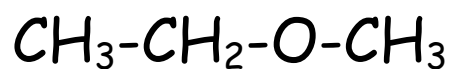
The addition of hydrogen to a carbon-carbon double bond to produce an alkane is called a **hydrogenation reaction**.

# Ethers

The general structure of an ether is R-O-R. The alkyl groups attached to the ether are named in alphabetical order.



ethyl molecule





Work on questions 7-12 on page 736

\*for #12, write the IUPAC names and not the common names.