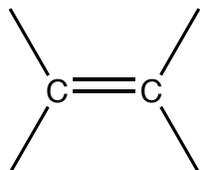


## Lecture Outline 4: Alkenes, Alkynes

**Alkene and Alkyne Nomenclature**

Alkene = double bond = olefin (oleum facere = to make oil)

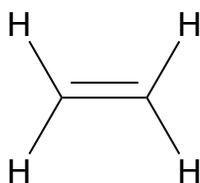
Alkyne = triple bond = acetylene (as functional group, not compound)



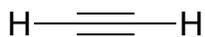
Alkene



Alkyne



Ethylene



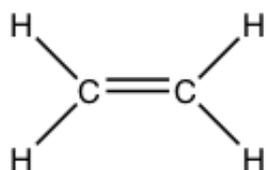
Acetylene

Simplest Alkene and Alkyne Possible
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## Alkene Nomenclature

Find longest chain, number from end to contain both ends of C=C and give lowest number to 1<sup>st</sup> C of C=C

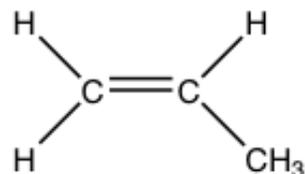
Change “ane” to “ene” precede with number to indicate first double bond position



ethylene

OR

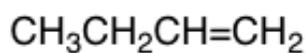
ethene



propylene

OR

1-propene  
prop-1-ene



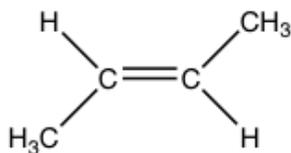
butylene

OR

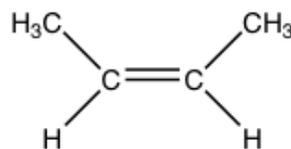
1-butene  
but-1-ene



Below are two structural isomers of 1-butene



trans-2-butene

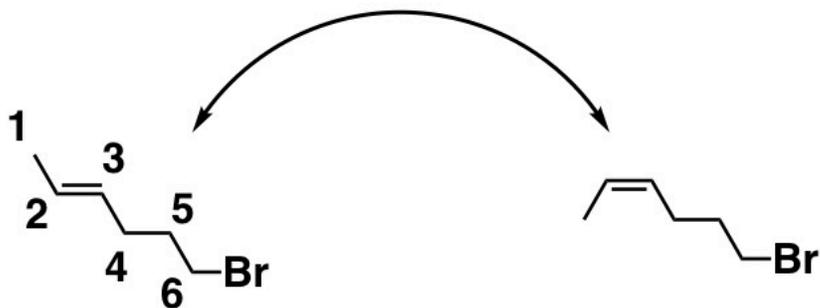


cis-2-butene

} diastereomers

**Example 1: 6-Bromo-2-hexene**

**Diastereomers**



**trans-6-Bromo-2-hexene**

**cis-6-Bromo-2-hexene**

In the cis isomer, the two higher priority groups on either side of the carbon-carbon double bond are pointing in the same direction.