**supplement #12*. Naming of Alkenes***

***Chemistry 3514 Organic Chemistry I***

common vs IUPAC naming



COMMON ethylene propylene isobutylene

 IUPAC ethene propene 2-methylpropene

**alkyl substituents: specifying double bond position**

Note*: post 1993, a new locant scheme was introduced by IUPAC for double bonds (see p 177).*

*Old New*

*2-pentene pent-2-ene*

*Your instructor is no fan of the new scheme. It sounds and looks ugly to him. Moreover, the new scheme immediately causes confusion when two functionalities exist as in the case of 3-penten-1-ol. Therefore, we’ll stay with the old-school, pre-1993 version. You won’t be penalized for using the new scheme, but your aesthetic sensibilities will be viewed with a dim eye.*

  **C**

 **|**

 **C-C=C-C C=C-C-C C-C-C=C-C**

 2-butene 1-butene 4-methyl-2-pentene

 C-C=C-C-C-Br C-C=C-C-C-OH

 5-bromo-2-pentene 3-penten-1-ol

 (not 1-bromo-3-pentene) (not 5-hydroxy-2-pentene)





 3-chloro-cyclohexene 2-cyclohexenol

(not 1-chloro-2-cyclohexene) (not 3-hydroxy-cyclohexene)

specifying geometric isomerization: E-Z



E => entgegen= against in German

which means the larger groups

on either side of the double bond are on opposite sides of the double bond.

Z=> zuzammen= together in German which means the two large groups on either side of the double bond are on the same side of the double bond

(E)-2-butene (Z)-2-butene



(E)-1-bromo-2-chloropropene (Z)-1-bromo-2-chloropropene

older notation:

(E)= `trans’

(Z) = ‘cis’