

MINISTRY OF EDUCATION
SECONDARY ENGAGEMENT PROGRAMME
GRADE 11
CHEMISTRY

WEEK 4

LESSON 1

Topic: Hydrocarbons

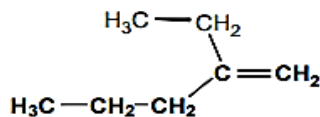
Sub-topic: Naming Isomers of Alkenes

Objective: Given the steps and examples of constructing isomers of branched alkenes, students will draw structures of branched alkane members correctly.

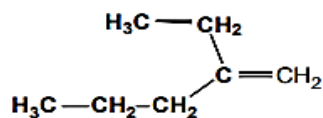
Content

Many of the same rules for alkanes apply to alkenes

1. Name the parent hydrocarbon by locating the longest carbon chain that contains the double bond and name it according to the number of carbons with the suffix -ene.

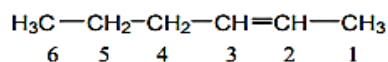


Parent = pentene



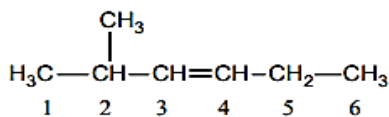
not hexene
(does not contain double bond)

2. a. Number the carbons of the parent chain so the double bond carbons have the lowest possible numbers.



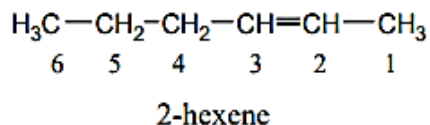
2-hexene

- b. If the double bond is equidistant from each end, number so the first substituent has the lowest number.



2-methyl-3-hexene

- Write out the full name, numbering the substituents according to their position in the chain and list them in alphabetical order.
- Indicate the double bond by the number of the first alkene carbon.



Let us write the IUPAC name for the alkenes shown in the table below by applying the general rules of nomenclature (naming).

TAB 13.4 IUPAC NAMES FOR ALKENES

S No	Structure	IUPAC name
1	$\text{CH}_3 - \text{CH} = \text{CH}_2$	propene
2	$\text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_3$	2-butene
3	$ \begin{array}{c} \text{CH}_2 = \text{C} - \text{CH}_3 \\ \\ \text{CH}_3 \end{array} $	2-methyl-1-propene
4	$ \begin{array}{c} \text{CH}_2 = \text{CH} - \text{CH} - \text{CH}_2 - \text{CH}_3 \\ \\ \text{CH}_3 \end{array} $	3-methyl-1-propene
5	$ \begin{array}{cccccc} \text{CH}_2 & = & \text{CH} & - & \text{CH} & - & \text{CH}_2 & - & \text{CH}_3 \\ 1 & & 2 & & 3 & & 4 & & 5 \\ & & & & & & & & \\ & & & & \text{CH}_3 & & & & \end{array} $	3-methyl-1-pentene

References

- http://www.brainkart.com/article/Alkenes_36493/
- <http://www.docbrown.info/page06/PRalkenes/alkeneqcomb.htm>
- <file:///C:/Users/USER/Desktop/Chemistry%20Grade%2011%20orig/Week%203/Lesson%201/alkenes.pdf>