

\$20.00

---

# Kentucky Class Notes

*Earn an A+ with Class Notes*  
*<http://KentuckyClassNotes.com>*

---

*CHE 232 Harris*

*Test 1*

This packet is a supplement to regular class attendance and is not designed to replace regular class attendance and participation. This packet is not required material for any class or by any staff or faculty member. This packet does not warrant any type of refund or return policy of any kind. The information presented in this packet is an interpretation of a lecture class and is not a direct copy of any professor's material. The layout and design of this packet is © 2011 Kentucky Class Notes LLC. Any reproduction of this packet is forbidden under federal copyright law.

# Kentucky Class Notes

*Earn an A+ with Class Notes  
http://KyClassNotes.com  
859.252.NOTE*

**CHE 232 Harris  
Spring 2011  
Test 1**

13 January 2011

Discussed syllabus (can be found on Blackboard)

- Important dates:
  - 8 February 2011- exam I (chapters 7, 8, 9, 22, 27)
  - 2 March 2011- exam II (chapters 23, 24, 25)
  - 12 April 2011- exam III (chapters 18, 10, 11)
  - 3 May 2011- final exam (cumulative)

## Exam I material

13 January 2011 & 18 January 2011

## Chapter 7- Alkyl Halides and Nucleophilic Substitution

### Introduction to Alkyl Halides

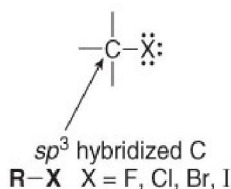
- Alkyl halides- organic molecules containing a halogen atom (X) bonded to an  $sp^3$  hybridized carbon atom
  - Classified as primary ( $1^\circ$ ), secondary ( $2^\circ$ ), or tertiary ( $3^\circ$ ) depending on the number of carbons bonded to the carbon with the halogen- this classification is the most important factor in determining the course of its chemical reactions

# Kentucky Class Notes

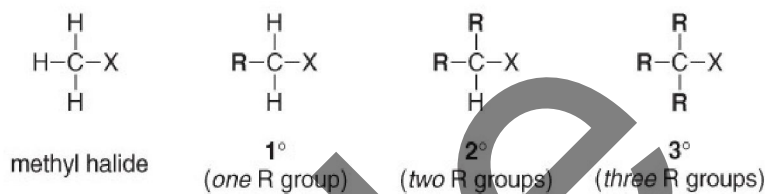
Earn an A+ with Class Notes  
<http://KyClassNotes.com>  
859.252.NOTE

CHE 232 Harris  
Spring 2011  
Test 1

## Alkyl Halide



## Classification of alkyl halides



X- $sp^2$ C: do NOT undergo substitution reactions

- Other types of organic halides:

- Vinyl halides- have a halogen atom (X) bonded to a C-C double bond
- Aryl halides- have a halogen atom bonded to a benzene ring
- Allylic halides- have an X bonded to the C atom adjacent to a C-C double bond
- Benzylic halides- have an X bonded to the C atom adjacent to a benzene ring

X- $sp^3$ C: DO undergo substitution

ti

## Nomenclature

- IUPAC system- an alkyl halide is named as a "halo alkane," an alkane with a halogen substituent
  - 1. Name the parent chain by finding the longest carbon chain
  - 2. Number the chain so the first substituent gets the lower number
  - 3. Name and number all substituents, giving like substituents a prefix (di-, tri-, etc.); to name the halogen substituent, change the -ine ending to -o (ex: "chlorine" → "chloro")
  - 4. Combine all parts, alphabetizing substituents (ignoring all prefixes except iso-)
  - Examples: 2-chloro-5-methylheptane, 1-ethyl-2-fluorocyclopentane
  - See figures 1 and 2.
- Common names- used only for simple alkyl halides
  - 1. Name all the carbon atoms of the molecule as a single alkyl group