$20.00

Kentucky Class Notes

Earn an A+ with Class Notes

http://KentuckyClassNotes.com

CHE 232 Harris

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

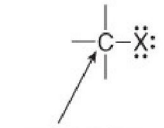
13 January 2011 & 18 January 2011

Chapter 7- Alkyl Halides and Nucleophilic Substitution

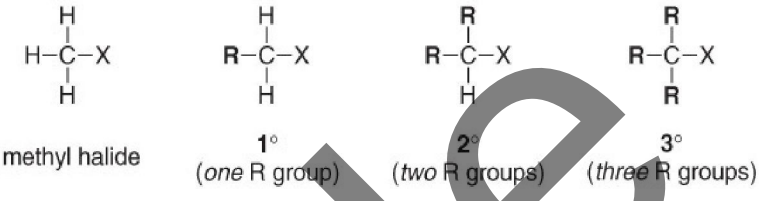
Introduction to Alkyl Halides

- Alkyl halides- organic molecules containing a halogen atom (X) bonded to an sp^3 hybridized carbon atom
  - Classified as primary (1°), secondary (2°), or tertiary (3°) 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

Alkyl Halide



Classification of alkyl halides



- 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^2 C: do NOT undergo substitution reactions

} 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