

Course 343

Lecturer Hackenberger

Day Wednesday

Date 9/11/13

Notes Taken By Guenette

Total # of Pages 4

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- Rd. Chapters according to syllabus

Buy Molecular Model

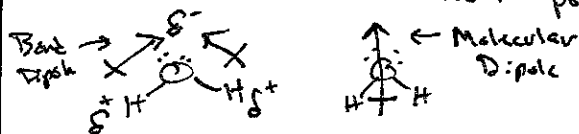
Problems for Ch. 2

1, 3-12, 14, 15, 23, 24, 26-28, 30, 31, 33-41, 44-48

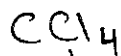
Exam - Focus on problems + lecture
- Be familiar w/ chapters

Last Lecture : - sp^2 (pg. 122 ff) and sp (p. 644 ff) hybridization
- Mo for alkenes (ethene) - Polarity
- Geometry of C-C bonds

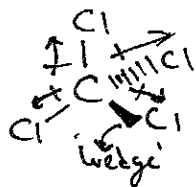
Differentiation between polarity ⁱⁿ Bond vs. Molecule



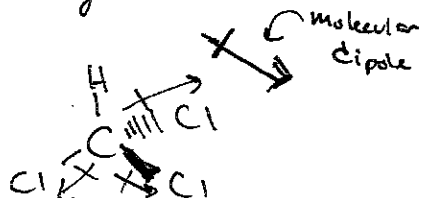
Polar Bond but no molecular dipole:



very electronegative

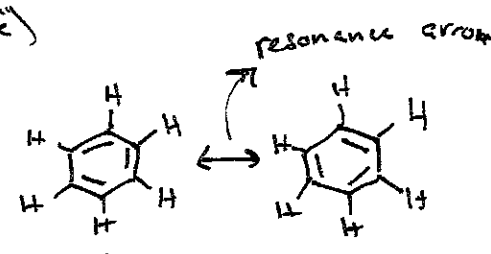



- all dipoles cancel each other out
no molecular dipole



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Molecular drawing conventions

- Draw lone pairs as: \ddot{x} (electro negative atoms contain lone pairs)
 good habit to always draw them
 - Localized vs delocalized bonding ("resonance")
 - ↓
 all bonding e⁻ are btwn 2 atoms (and not more)
 - ↓
 electrons are shared among > 2 atoms
- Argyl group
- 
- resonance arrow
- not equilibrium arrow \rightleftharpoons
- You'll also find

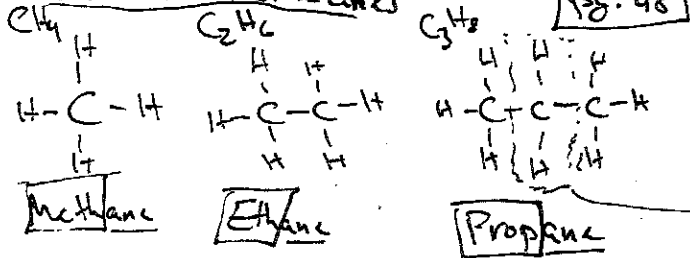
 → do not use when drawing in this class

CH 2 - Alkanes (p.46)

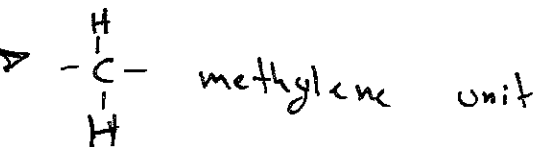
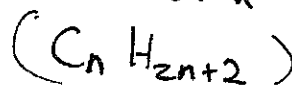
Alkanes - sp³ hybridized carbon, only single bonds
 other name: aliphatic hydrocarbons (greek for 'fat')

Nomenclature for alkanes

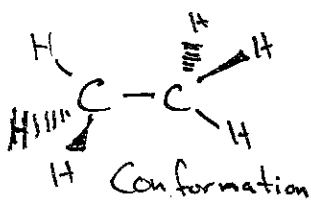
Linear alkanes



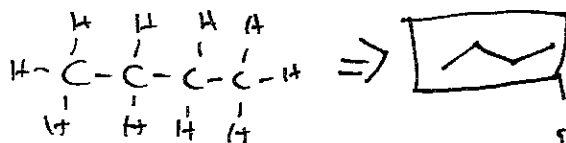
C₁-C₁₀ → naming convention based on n



Draw shape



Other drawing conventions

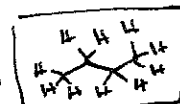


line: bond

point: carbon

Hydrogens are not shown

in the beginning draw H's

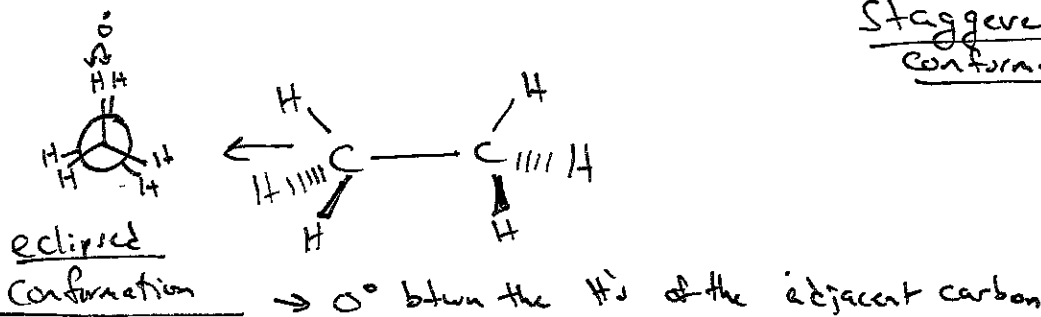
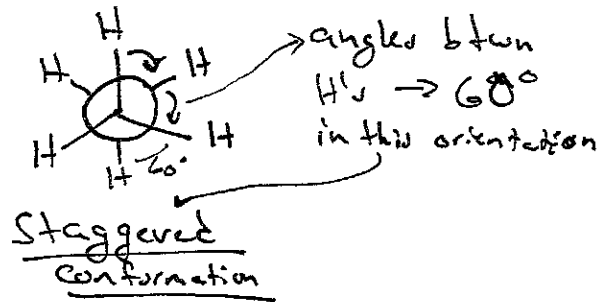
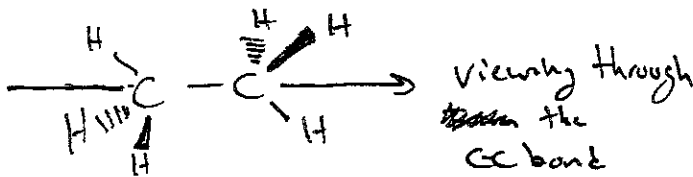


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Alkane conformation

Newman Projection

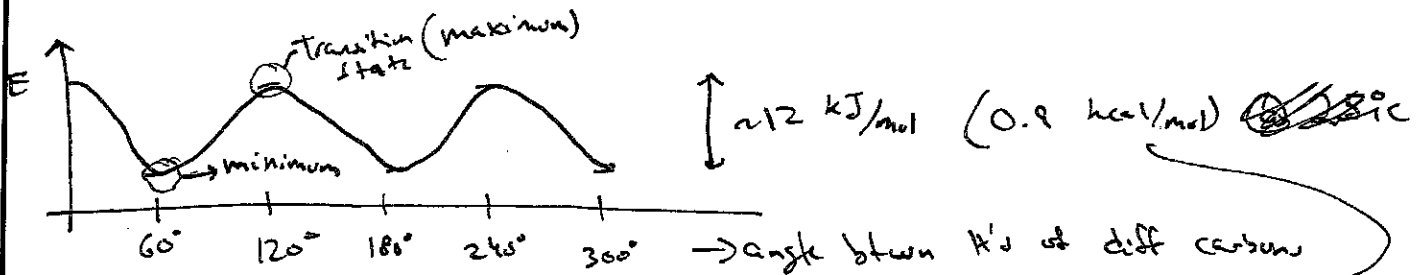
Ethane (next lecture butane)



Staggered conformation - energetically more stable (not for ethane)

eclipsed conformation - least stable

Fig 2.3 p52



@ 25°C 10^{11} rotations per second ← this means

high energy point - maximum (pl. maxima)
 low energy point - minimum (pl. minima)

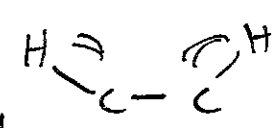
minimum represents stable conformation → staggered
 maximum - unstable conformation - transition state → eclipsed

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Why is staggered more stable (not mutually exclusive)

Hypothesis 1

repulsion btwn the  C-H bonds (think about energy of the orbital)