

S343 Organic Lab

Introduction

Today

- Tour of website
- Syllabus
- ChemDraw
- Working with chemical formulas

Syllabus

- Attendance
 - No makeup quizzes or exams
 - Excused policy
 - No makeup lab possible
 - Excused policy
 - More than one absence leads to withdraw/failure for the course!
 - No lab scores dropped
 - 5% report penalty for every five minutes late
 - Not allowed in lab if more than 20 minutes late

Safety

- AI must be present
- Safety goggles must be worn (tell your AI if you wear contacts)
- Proper attire (see syllabus)
 - **Change: No leggings, running pants, tights, etc!**
- No electronics
- No food, gum, or drinks
- Avoid contamination of chemicals, yourself, and others
- Do not endanger yourself or those around you

Before lab

- Preparation is key to safety and learning
- Prelab quizzes based on prelab assignment
 - Handwritten answers allowed in lab
- Fill in notebook prior to class
 - No texts or handouts allowed in lab
 - See syllabus for guidelines

Grading

- Lab reports (450pts)
 - Formal and informal
- Prelab quizzes (100pts)
- In class quizzes (100pts)
- Midterm (100pts)
- Final (150pts)
- **Plagiarism/cheating NOT TOLERATED!**

This week in lab...

- Required to be in lab this week
- Proper lab attire
- Check-in, but no notebook necessary
- No prelab quiz—fill out safety worksheet
- “Lab report”--ChemDraw

Elemental Analysis

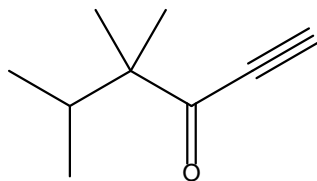
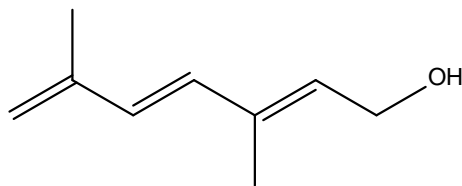
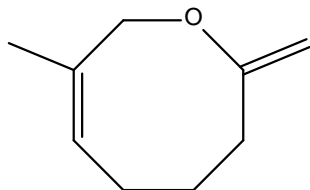
- Determine elemental composition through burning to water and carbon dioxide
- Calculate %C, %H



- Example problem: A compound was found to be 71.4% C and 9.57% H. What is its empirical formula?
- Solution:
 - Assume 100 g sample
 - Determine %O
 - Determine moles
 - Convert to whole numbers
- Answer:

Degrees of Unsaturation

- These compounds have the same molecular formula



- Degrees of unsaturation
 - $2n + 2$ rule for hydrocarbons
 - Ignore oxygen
 - Halogen = H
 - $N = \frac{1}{2} C$
- How many rings in a $C_8H_{11}ClO$ compound known to have two double bonds?