

**Chem 14CL (FALL 2005)  
Report Guidelines for Experiment #10  
Oxidation of Borneol to Camphor**

**Pre-lab Report MUST be written inside the lab notebook.**

**Pre-lab Report Guideline**

**NOTE: The experimental procedures for this experiment are provided as handout**

- (i) Title of the experiment
- (ii) Introduction – outline the techniques (including any synthesis, purification and identification) that you will be using in this experiment.
- (iii) Procedure in Flowchart Format (*for the entire experiment - except for the section on optical rotation*)
- (iv) Reference of the experimental procedures
  
- (v) Pre-lab exercise questions #1 to 6 (*refer to the experimental handout pages 439-441*)
- (vi) Pre-lab exercise questions #1 & 2 (*refer to you lab manual – page 108*)

You can use **FOUR** different sites **within** the MSDS on the Web for question 1 of the pre-lab. (refer to the MSDS handout for more details)

**Two other excellent web sites that will also link you to MSDS are:**

<http://www.chemnetbase.com>

Click on the “**Combined Chemical Dictionary**” to start the search

You may also use CS Chemfinder for the search.

<http://chemfinder.cambridgesoft.com/>

(vii) Data Table(s) (USE A NEW PAGE FOR THIS SECTION)

*Set up data table(s) that will allow you to record any numerical values as well as all the observations during the experiment.*

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**Post-lab Reports MUST be written inside the lab notebook. Refer to the lab schedule for due date.**

**Post-lab Report (Both period 1 & 2)**  
**This is an INDIVIDUAL Report**

**(I) Abstract** – summarize goal(s) of the experiment, your experimental results as well as the experimental techniques that you used that enable you to achieve such goal(s).

**(II) Data & Data Analysis**

- Write balanced chemical equations describing what happen during various steps of the experiment

**Note: Use the experimental handout as a guide when writing various chemical reactions.**

- Find the theoretical yield of camphor

- Using the theoretical yield, calculate the % yield for the *crude* product

- Calculate the % yield for the *sublimed* product

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**(III) Conclusion**

- Comment on % crude yield

- Interpretation of camphor sublimed product composition and purity by comparing the IR spectrum for PURE camphor with the EXPERIMENTAL IR spectrum. **Explain** all your reasoning.

You can download a copy of the IR spectrum for PURE CAMPHOR from the NIST Web Book.

<http://webbook.nist.gov/chemistry/>

*Click on “NAME” and type “Camphor”*