

NAME _____

Organic Chemistry 1, CHEM331 section 003
Laboratory Exam 1, Dr. Sweeting
December 3, 2001, 100 points

If you use the back of the page to answer a question, you must direct me to the location to receive credit.

1. a) What do the letters MSDS stand for? If you cannot remember what the letters stand for, describe what the MSDS does. (4 points)

b) Who has access to an MSDS? (4 points)

c) Please list three important pieces of *safety* information that can be obtained from an MSDS. (12 points)

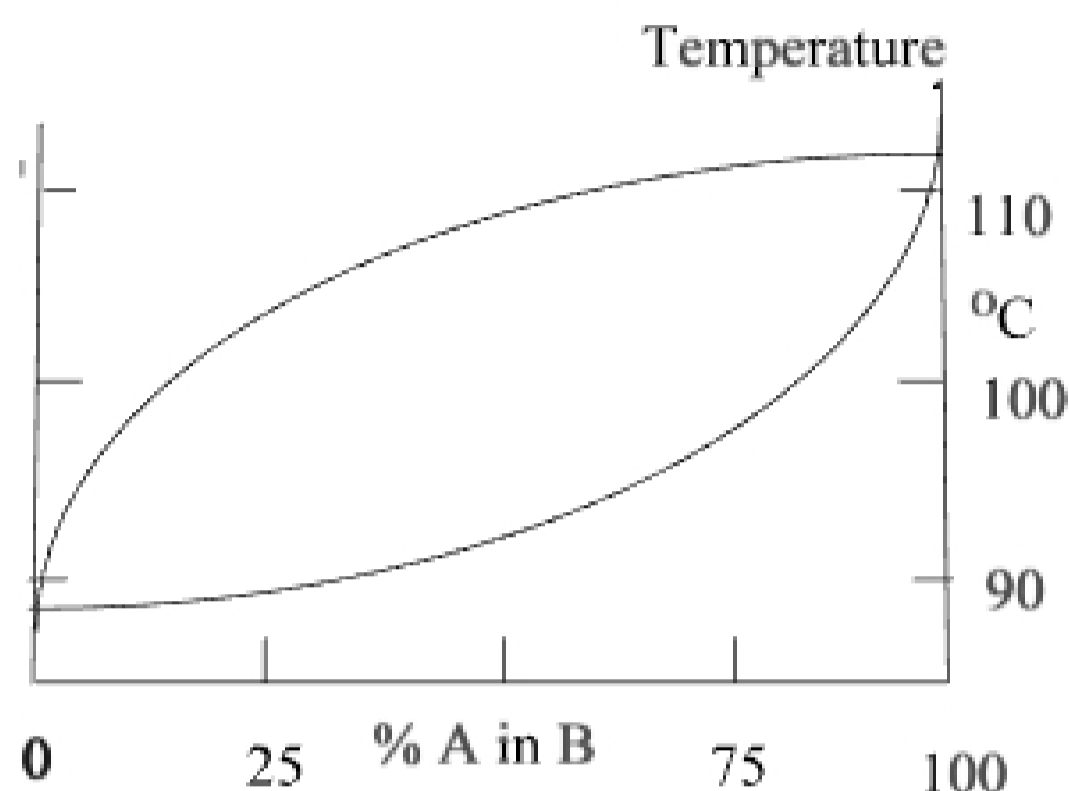
d) Please make a sketch of the laboratory (SMITH 589) and mark the locations of the following items on it (there may be more than one): eye-wash fountain, fire extinguisher, broken glass disposal, acidic waste disposal. (8 points)

2. a) Student M converted methylcyclohexanol to a mixture of methylcyclohexenes. Beginning with 24.8 g of alcohol, she obtained 12.1 g of alkene after drying. What was her percent yield for the experiment? (8 points)

b) Student P obtained 22.5 g in this experiment. Please comment on the differences between the results of student M and student P. (4 points)

3. Please make a labelled sketch of the apparatus used for separation of a purified solid from its solution, showing all clamps and identifying the necessary utilities. (12 points)

4. Sketched below is a graph of boiling temperature as a function of composition for a two-component solution, in this case, of A and B.



- a) Label each part of the graph (delineated by the lines shown) with the states of matter and compounds found there. (8 points)
- b) Assume you have a solution that is 70% A in B and you have brought it to a boil in a very short *simple* distillation apparatus (assume one theoretical plate). Please give the following information for these materials or this experiment (16 points):
- the temperature of the liquid in the "pot" (Note - you did not do this experiment)
 - the composition of the vapor above the boiling liquid
 - the temperature read by the thermometer in the distillation "head" (3-way adapter)
 - the composition of the liquid condensed and collected
 - the boiling point of pure A
 - the boiling point of pure B