WEEK 7 WORKSHEET

1. Theory: Recrystallization

   A. What is the purpose of keeping the solution warm during recrystallization?

   B. Why does cloudiness appear and when does it disappear?

2. Practice: Describe the following chemical reactions as SN1 or SN2

   a.

   ![Chemical Structure](image1)

   b.
3. **Review**: Melting Range. In the experiment being conducted in the lab during week 7, we are interested in 2 values: The melting range of the crude product and the melting range of the recrystallized product. What purpose do these two readings serve?
4. Theory: Reading a TLC plate. You are running a TLC plate of a sample in 10 mL of an eluting solvent (9:1 ethyl hexanes:ethyl acetate). There are three spots on the plate: one for the crude product, one for the purified product, and one for the product standard. In order to determine the identity of your product, what should you keep an eye out for?

5. Calculation: Percent Yield and Percent Recovery
   
   a. What is the difference between percent yield and percent recovery?
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b. Perform the calculations for the following examples:

i. When 16.0g of CaCO$_3$ are heated to thermal decomposition, 7.54 g of CaO is obtained. Calculate percent yield.

\[ \text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2 \]

ii. If 14g of copper was used in a recrystallization process and the amount of copper recovered at the end of the process is 12g, calculate percent recovery.