CHEM 121, Section Date

Date 2/21/23

Name

Jaynice Denis

#### Lab Day 5, Recrystallization & Melting Points Prelab Questions

#### Prelab Questions

1) During a melting point determination, the heating is constant and causes the temperature of the unit to continuously rise. In light of that, explain in your words why a measured melting point can never truly be a single temperature. Which would give a smaller melting point range, slower heating or more rapid heating? A small sample or a large sample? Explain.

Melting point can never truly be a single temperature because a solid melts over a range of temperatures instead of a specific temperature, using a range would be better because it gives when the solid starts to melt and then when it finishes melting. Slower heating would give a smaller melting point range because it gives it a more precise range. A small sample would require less heat than a larger sample to melt therefore it would also give a smaller melting point range.

Explain why it is common practice to determine a melting point on an unknown compound rapidly first, and then to rerun the melting point slowly.

It is common practice to determine the melting point rapidly first so that you can determine the range so that you can get an estimate of where the boiling point is. The second time which is to return the melting point slowly will give you a more accurate reading.

3) This lab uses a mixed solvent system. Explain the possible advantages of using two solvents and the properties of those solvents that are important. Don't look up the answers, think.

The advantage of using two solvents is that it will help with the growth of the crystals.

4) If fine sand were an impurity in a sample, how would it effect the melting point? What would make you suspicious that something inert like sand was contaminating your sample?

If sand were an impurity in the sample, I think it would make the melting point high since it requires a lot of heat to melt sand. Something that would make me suspicious is if the sample is taking a while to melt even at a very high temperature.

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#### Table of Contents Chem 121 Lab 5 Manual Answers

- 1. Understanding the eBook Chem 121 Lab 5 Manual Answers
  - The Rise of Digital Reading Chem 121 Lab 5 Manual Answers
  - Advantages of eBooks Over Traditional Books
- 2. Identifying Chem 121 Lab 5 Manual Answers
  - Exploring Different Genres
  - o Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
- 3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Chem 121 Lab 5 Manual Answers
  - User-Friendly Interface
- 4. Exploring eBook Recommendations from Chem 121 Lab 5 Manual Answers
  - Personalized Recommendations
  - Chem 121 Lab 5 Manual Answers User Reviews and Ratings
  - Chem 121 Lab 5 Manual Answers and Bestseller Lists

- 5. Accessing Chem 121 Lab 5 Manual Answers Free and Paid eBooks
  - Chem 121 Lab 5 Manual Answers Public Domain eBooks
  - Chem 121 Lab 5 Manual Answers eBook Subscription Services
  - Chem 121 Lab 5 Manual Answers Budget-Friendly Options
- 6. Navigating Chem 121 Lab 5 Manual Answers eBook Formats
  - ∘ ePub, PDF, MOBI, and More
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  - Chem 121 Lab 5 Manual Answers Enhanced eBook Features
- 7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Chem 121 Lab 5 Manual Answers
  - Highlighting and Note-Taking Chem 121 Lab 5 Manual Answers
  - Interactive Elements Chem 121 Lab 5 Manual Answers
- 8. Staying Engaged with Chem 121 Lab 5 Manual Answers
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Chem 121 Lab 5 Manual Answers
- 9. Balancing eBooks and Physical Books Chem 121 Lab 5 Manual Answers
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Chem 121 Lab 5 Manual Answers
- 10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
- 11. Cultivating a Reading Routine Chem 121 Lab 5 Manual Answers
  - Setting Reading Goals Chem 121 Lab 5 Manual Answers
  - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Chem 121 Lab 5 Manual Answers
  - Fact-Checking eBook Content of Chem 121 Lab 5 Manual Answers
  - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning

- Utilizing eBooks for Skill Development
- Exploring Educational eBooks
- 14. Embracing eBook Trends
  - Integration of Multimedia Elements
  - Interactive and Gamified eBooks

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