

Melting Points Data Table

Pure BHT	°C
BHT + cetyl alcohol	°C
BHT + unknown	°C

Masses Data Table

	BHT	Cetyl Alcohol	Unknown
Solution 1: BHT + Cetyl Alcohol, g			—
Solution 2: BHT + Unknown, g		—	

Calculations

k_{fp} , BHT, °C/m _____ °C/m

Molar mass, unknown, g/mole _____ g/mole

Post-Laboratory Review Questions

1. The following errors occurred when the above experiment was carried out. How would each affect the calculated molar mass of the solute (too high, too low, no effect)? Explain your answers.
 - a. The thermometer used actually read 1.4 °C too high.
 - b. Some of the solvent was spilled before the solute was added.
 - c. Some of the solute was spilled after it was weighed and before it was added to the solvent.
 - d. Some of the solution was spilled after the solute and solvent were mixed but before the freezing point was determined.
2. What was the least precise measurement in the experiment? How does this limit your significant digits?
3. Did the solutions show any evidence of supercooling?
4. Why is it advantageous to choose a solvent that has a large value for k_{fp} ?
5. Explain why the pure solvent shows a level horizontal curve as solidification occurs, but the curve for the solution slopes downward slightly.