Fall 2020 (Total 8 points, each question = 2 points)

Active learning Exercise: Melting Point

Post Lab Questions:

1. One of the most common causes of inaccurate melting points is too rapid heating of the melting point bath. Under these circumstances, how will the observed melting point compare with the true melting point?

When the melting point bath is heated too rapidly, the temperature will rise too quickly and the observed melting point will be much higher than the true melting point.

2. What effect would incomplete drying of a sample (for example the incomplete removal of a recrystallization solvent) have on the melting point?

If a sample is not dried completely, then there will be room for error. This means that there may be impurities when trying to heat the sample, and when impurities are in a sample, the melting point will be lowered and the range will broaden.

3. Why is it important to pack the sample tightly in the melting point capillary?

It is important to pack the sample tightly in the melting point capillary because it will minimize lag during the melting process and heat transfer.

4. Why is it important to heat the melting point bath or block slowly and steadily when the temperature gets close to the mp.?

It is important to heat the melting point bath slowly and steadily when getting close to the mp because as the temperature gets closer to mp, if it is heated too fast the range will be higher than the true melting point. The melting range will also be much broader than the proposed .5-1.0C and will not be as accurate as it should be.