

Name: _____

Extraction of Caffeine from Tea**Data**

Mass of tea bag (with leaves, before brewing)		
Mass of empty tea bag (provided by instructor)		
Mass of dry 25 mL Erlenmeyer Flask		
Mass of 25 mL flask with caffeine (after evaporation)		
Mass of caffeine		
Appearance of caffeine		
Melting point of caffeine		

Calculations

1. Calculate the mass of the tea leaves in the bag and record the result in the space above.
2. Calculate the mass percent of caffeine in the tea leaves. Show your work below.

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3. Suppose your tea bag was used to brew a standard American “cup” of tea (which is actually 6 fluid ounces). Calculate the concentration of the caffeine in the beverage in units of mg of caffeine per fl. oz. (Show your work below)

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1. Black tea often contains up to 5% caffeine by mass. How do your results compare with this value? What might account for measuring a percentage lower than this value?

2. The literature melting point of caffeine is 238 °C. How does your measure melting point compare? What does the melting point measurement tell you about the purity of the recovered caffeine? (Remember, a depressed and broad-ranged melting point is indicative of an impure sample.)