**Chem 101 Laboratory Exercise #6 Laboratory Notebook**

**Extraction of caffeine from Tea**

*Using Microsoft Word, students are to write their in-lab notes below* while *completing the Laboratory exercise. The Laboratory notebook must be uploaded to the CHEM 101 lab Brightspace site as a readable .pdf by the end of the lab period. Please see page 7 of the 202309 CHEM 101 lab manual as to all the information required in the in-lab notes. The documentation below must reflect the student’s own work without assistance from others.*

**Name:** Arfaz Hossain **Lab Section:** B12 **Quad:** 2 **Date:** November 30, 2023

**In-lab Notes:**

**Procedure**

First, I opened a tea bag and weighed the contents on a balance. Next, I transferred the tea into a 125 mL Erlenmeyer flask and added 50 mL of distilled water, bringing it to a boil on a hot plate. In a separate 100 ml beaker, I dissolved approximately 5 g of NaCl in 20 ml of distilled water. After decanting the hot tea solution, I added 10 g of NaCl and 0.1 g of Ca(OH)2 to it, swirling the mixture until dissolved. Using vacuum filtration with a Buchner funnel and Celite, I separated the solid residue. The filtrate was then warmed, and I added 8 ml of isopropanol, stirring for a minute. After layer separation, I collected the top isopropanol/caffeine layer twice, and subsequently added an equal volume of ethanol. After allowing for crystallization, I vacuum-filtered the caffeine crystals, air-dried them briefly, and recorded the weight.

**Tea Bag Contents Weighed Amount:** 2.79g

**Caffeine Extracted:** 0.787g

**Reference:**

*Isopropyl* 111 Colonnada Road, Ottowa, ON K2E 7L6 LOT 204656

*Tea Bag* Uniliver Canada, Toronto, Ontario, M4W 3R2

*Sodium Hydroxide* Ca(OH)2 FW 74.09