

## Report for Chem 101 Laboratory Exercise #6

### Extraction of caffeine from Tea <sup>1</sup>

Using Microsoft Word, students are to **insert responses in all yellow highlighted areas**. It is recommended that the report be completed without changing font size, column width, row width, margins, and highlights. The completed report must be uploaded to the CHEM 101 lab Brightspace site as a .pdf file by the due date posted on Brightspace. All answers must be the student's own work without assistance from others. Only reports which are completed using the template will be marked.

Name:  Lab Section:  Quad:  Date:

#### Abstract (max. 3 lines)

By using the liquid-liquid extraction process on No Name tea, the caffeine can be extracted from tea leaves. The weight of tea leaves and weight of caffeine, can be used to find the weight % of caffeine. The weight % of caffeine is 2.56%.

#### 1Data/Results

**Table 1.** Experimental data and calculated values

Extraction and isolation	
Weight of tea leaves - No Name	2.886g
Weight of caffeine	0.074g
Weight % caffeine in tea	2.56%
Lethal dose for a 700 g rat	1.8g approximately 2 cups of tea

#### 1Algebraic Equation

Weight % of caffeine in tea =  $\frac{[(\text{weight of caffeine})/(\text{weight of tea leaves})] \times 100}{}$

#### Discussion Respond to the following:

Give one shortcoming of this experiment, not a personal error, that could contribute to an inaccurate value of caffeine that was in the teabag. (max 3 lines). Some things that could contribute to an inaccurate value of caffeine is impurities in the tea bag, changes in temperature, or incomplete extraction/crystallization/precipitation.

#### Conclusions

(max 1 line)

The weight of tea leaves and weight of caffeine, are find using the liquid-liquid extraction process. The weight % of caffeine is 2.56%.

#### References

Laboratory Manual, Chemistry 101, pp.39-40. University of Victoria: Victoria, B.C. Fall 2023  
Tea, Loblaw's Inc, Toronto Canada M4T 2S8, Lot #1102186

<b>Feedback Summary</b>	max.
<b>Pre-lab quiz:</b> Are all responses correct?	4
<b>Laboratory Notebook:</b> Have ALL data, observations and procedures been recorded?	1
<b>Report:</b> Are all sections completed accurately? Is the abstract accurate and complete? Are responses in the Discussion correct? Does the conclusion only include the appropriate information? Are the References correctly formatted and cited?	3
<b>Participation:</b> Did the student come prepared, was time used well in lab and was student engaged in the experiment? Did the student show the email confirmation letter and request the TA to check their drawers for completeness before they left the lab?	1
<b>Performance evaluation:</b> Did student follow the safe practice guidelines throughout the whole lab period?	1
<b>Total mark</b>	10

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