

Name \_\_\_\_\_

Section \_\_\_\_\_

Desk# \_\_\_\_\_

Date \_\_\_\_\_

Lab Partner's Name \_\_\_\_\_

# STOI 386: Determining the Empirical Formula of Copper Chloride

**Recorded Data:** (All data should be recorded in pen.)

1. density Cu <sub>x</sub> Cl <sub>y</sub> soln (g/ml)	<u>1.074</u>	
2. concentration Cu <sub>x</sub> Cl <sub>y</sub> soln (g/ml)	<u>0.08067</u>	
	<b>Run #1</b>	<b>Run #2</b>
3. Mass of empty casserole, g	<u>91.613</u>	<u>90.968</u>
4. Mass of casserole with ~25ml Cu <sub>x</sub> Cl <sub>y</sub> soln, g	<u>116.800</u>	<u>116.979</u>
5. Mass of ~25ml Cu <sub>x</sub> Cl <sub>y</sub> soln, g	_____	_____
6.*Volume of ~25 ml Cu <sub>x</sub> Cl <sub>y</sub> soln, ml (V = m /d)	_____	_____
7.*Mass of actual Cu <sub>x</sub> Cl <sub>y</sub> in ~25 ml soln, g (m <sub>Actual</sub> = V x conc.)	_____	_____

**Repeat heating, cooling, and weighing procedure five times or until two successive weighings are within 10mg.**

8. Mass of evaporating dish + Cu	1 <sup>st</sup> heating, g	<u>92.426</u>	<u>93.259</u>
	2 <sup>nd</sup> heating, g	<u>92.424</u>	<u>91.846</u>
	3 <sup>rd</sup> heating, g	_____	<u>91.842</u>
	4 <sup>th</sup> heating, g	_____	_____
	5 <sup>th</sup> heating, g	_____	_____

**Calculations (Using equations in lab manual pp 58-59.):**

9. *(Eq. 11) Mass of Cu produced, g	_____	_____
10.*(Eq. 12) Percent Cu in copper chloride, %	_____	_____
11.*(Eq. 13) Mean Percent Cu in copper chloride, %	_____	
12.*(Eq. 14) Mass of Cl in copper chloride, g	_____	_____
13.*(Eq. 15) Percent Cl in copper chloride, %	_____	_____
14. (Eq. 16) Mean Percent Cl in copper chloride, %	_____	
15. Empirical Formula of Copper Chloride (Corresponding to Table 2)	_____	

\*Sample Calculations for equations labeled with an asterisk, \*, should be shown on a separate piece of paper. Calculations may be completed for Run #1 only, except for the mean percent of copper in the copper chloride which will incorporate both Run #1 & Run #2.