

## Laboratory Report Guideline

### Synthesis & Analysis of a Coordination Compound

1. **Cover Page** – Title of the Report, Name, Partner's Name, Date, TA Name, Section #. [1 pt each]

**2. Data:**

report all observations [5]

part I: mass of  $K_2C_2O_4 \cdot H_2O$  and  $FeCl_3 \cdot 6 H_2O$  used [5]

mass of product [5]

part II: molarity of  $KMnO_4$  used, a table with starting and ending volumes for the three titrations, the mass of the crystals used for the titrations, and the mass percent [10]

part III: molarity of  $NaOH$  [5]

three MeasureNet titration curves, and mass of the crystals used for the titrations [15]

**3. Calculation:**

calculate the theoretical yield (mass of product) and the percent yield [5]

give the results for all three trials but only one complete calculation

calculate the percent by mass of oxalate ion from the data. [5]

show the results are within 5 % of each other [5]

give the results for all three trials but only one complete calculation

calculate the percent by mass of iron ion from the data [5]

calculate the percent difference for the two trials [5]

give the results for all three trials but only one complete calculation

calculate the percent by mass of potassium ion from data [5]

calculate the percent difference for the two trials [5]

show how you to determine the molecular formula using calculation [5] (Chapter 3, textbook)

**4. Results and Discussion**

discuss the accuracy and precision of all percent values – give a numerical assessment (such as percent difference) and explain the results [5]

discuss percent difference (uncertainty) for each mass percent [potassium, oxalate, and iron] [10]

discuss “the accuracy” of the molecular formula that you have determined and compare with the literature value ( $K_3[Fe(C_2O_4)_3] \cdot 3 H_2O$ ) [10]

**5. Conclusion:**

give an overall conclusion of the experiment [5]

restate the percent by mass of iron, potassium, and oxalate ion and their percent uncertainties [5]

restate the molecular formula you have determined [5]

restate the resulting mass and the percent yield [5]

**6. Reference** [10]

**7. Blue sheet** - neatly written [9 pts]

**Reminder:** be sure not to use pronouns and make sure all your graphs, data and calculations have appropriate units, significant figures, and axis label.