Synthesis and Analysis of a Nickel Salt Ni(en)$_2$(H$_2$O)$_6$-2xSO$_4$ • y H$_2$O

General Chemistry 201

Due Date:

<table>
<thead>
<tr>
<th>Comments on report</th>
<th>Point</th>
</tr>
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1. **Introduction and Procedures**
   A. Introduction
      - Objective of Expt.
      - Background information: Math Relationship
   B. Procedures
      - Outline of procedures in Expt.
      - Flow chart pictorial of procedures.
      - Diagram of information (data) to be recorded during Expt. (Table form.)
      - Safety and disposal information

2. **Data, Observe., Results and Calc.**
   C. Data and Observation
      - Part I: Observation: What procedures were changed from the original procedure.
      - Description of synthetic procedure for Salt A and Salt B detailed description of procedure
      - Part II: Observation:
      - Analysis of Assigned Salt;
      - Analysis of Given Salt

3. **Calculations & Results**
   D. Calculations:
      - Part I: % Yield of Nickel Salt; Salt A - Blue product and Salt B - Violet product
      - Part II: Analysis of Salt A or Salt B (Depending on assignment)
      - % en from Titration
      - Calibration graph
      - % Ni$^{+2}$ and SO$_4^{2-}$
      - % Water
      - Chemical Formula of Nickel Salt A and B

4. **Discussion / Conclusions and Post-Lab Questions**
   F. Discussion
      - Complete discussion on synthesis and the reaction conditions for salt assigned. Discuss how the experimental conditions in part I could lead to different product. How can the color of the salt and CFT be used to give clues on the formula of the two salts.
      - Discussion on the analysis of the salts and assumption used for the calculations. What is the chemical formula of the two salts? Are the formulas consistent with the experimental conditions and the color of the salts. If the results of the experiment are not consistent with the expected result, what could have lead to the inconsistencies?
   G. Conclusion
      - Summary of the goal of the experiment and how that goal was achieved in the experiment.

5. **Overall Presentation (of lab notebook)**
   - Lab technique during experiment; example are, class preparation, safety glasses precautions and leaving the laboratory clean.
   - Report presentation; example are the headings of each report which includes name, title, lab partner, date and section #.
   - Legibility of report. Is the report easy to read or is important information jotted down by small print in the corners of the lab report. The overall impression is important.

Total = 100 pts total