

**PREPARATION AND ANALYSIS OF TRIS(2,4-PENTANEDIONATO) AND Tris(1,1,1-TRIFLUORO-2,4-PENTANEDIONATO) COMPLEXES OF COBALT(III)**

**PRE-LAB QUESTIONS**

1. Write a balanced equation for the oxidation of  $\text{Co}^{2+}$  to  $\text{Co}^{3+}$  by hydrogen peroxide in acidic solution.
2. Why is gas evolved during the oxidation described in question (1)?
3. How many stereoisomers of  $\text{Co}(\text{tfa})_3$  are possible? Are any of them enantiomers?
4. Would you expect tris(1,1,1,5,5,5-hexafluoroacac)chromium(III) to be more, or less volatile than tris(acac)chromium(III)? Offer an explanation for your conclusion.
5. Why is 2,4-pentanedione more acidic than an ordinary ketone?