

Name: _____

Date: _____

Lab Section: _____

Prelab Assignment: Qualitative Analysis of Group III Cations

1. Given the very low value of K_{sp} for $\text{Cr}(\text{OH})_3$, a precipitate of $\text{Cr}(\text{OH})_3$ would be expected if only 6 M NaOH were added to the mixture of Group III cations in the first step of the procedure. Explain how and why the chromium remains in solution.

2. A solution may contain one or more of the Group III cations. When this solution is combined with NaOH (aq), NaOCl (aq) and NH_3 (aq) only a colorless solution is obtained with no precipitate evident. Indicate whether each of the following cations is present, absent or undetermined.

 Cr^{3+} _____ Al^{3+} _____ Fe^{3+} _____ Ni^{2+} _____

Explain.