

Chemistry 111 Group Work Assignment

1. Identify the species oxidized, the species reduced, the oxidizing agent and the reducing agent in the following electron transfer reaction.



2. What are the oxidation numbers of:

Ni and S in  $\text{NiSO}_4$

Cl in  $\text{ClO}_3^{-}$

3. A student is asked to standardize a solution of **potassium hydroxide**. He weighs out **0.930 g** potassium hydrogen phthalate ( $\text{KHC}_8\text{H}_4\text{O}_4$ , treat this as a monoprotic acid).

It requires **35.8 mL** of **potassium hydroxide** to reach the endpoint.

A. What is the molarity of the **potassium hydroxide** solution?  M

This **potassium hydroxide** solution is then used to titrate an unknown solution of **hydrochloric acid**.

B. If **28.6 mL** of the **potassium hydroxide** solution is required to neutralize **10.8 mL** of **hydrochloric acid**, what is the molarity of the **hydrochloric acid** solution?  M

4. Write net-ionic equations for the following reactions:

