Illinois Institute of Technology Markiyan Varhola

CHEM-124-L07 LAB CWID: 20324717

November 21, 2014

Analysis on an Al-Zn Alloy

**Objective:**

The purpose of this lab was to determine an unknown compound through the analysis of percentages of zinc and aluminium in an alloy.

**Procedure:**

A suction flask, large test tube, and stopper assemblies were first obtained and cleaned. A sample of an unknown Al-Zn alloy was also obtained and weighed. A gelatin capsule was also weighted and the massed alloy was placed into the capsule. A suction flask and beater were then filled about ⅔ of the way with water, and a stopper on the suction flask was inserted into the flask. Air was removed from the system by connecting the tubing that would go to the test tube to an aspirator. After a vacuum was created, the tube was pinched shut to prevent air siphoning. 10 ml of HCl was measured and poured into a test tube, and the tube was clamped to a stand. The gelatin capsule was then dropped into the test tube. The pinched tube was then connected to a stopper and was then inserted into the test tube and unpinched. Any excess water that went into the beaker was removed before the reaction occurred. After the reaction occurred and water was displaced into the beaker, it was weighed and recorded.

**Specialized Chemical Technique:**

The process of measuring the volume of gas through the displacement of water was practiced. Standard safety procedures were followed.

**Final Result:**

During the first trial, the volume of hydrogen gas evolved was 102.238 ml from .103 g of alloy. During the second trial, 111.03ml of hydrogen gas was evolved from .105 g of alloy.

**Conclusion:**

After calculations, the alloy in the first trial was 0.0643 g of Al and 0.0384 g of Zn. Therefore, the alloy was composed of 62.43% Aluminium and 37.57% Zinc. The alloy in the second trial contained 0.0693 g of Al and 0.0417g of Zn. The percentages of the material were almost identical to the first trial, as the alloy was composed of 62.43% Aluminium and 37.56% Zinc.

**Attachments:**

* Data Sheet
* Calculations
* Post-lab Exercises