

Chemistry of Copper Lab

In general: Be able to identify the type of reaction, predict products, write correct formulas, and balance equations. Know the colors of all the copper containing products.

Review the experiment and your results. Make sure you understand each step that you performed. For example, why was reaction 1 performed in the hood?

1. Classify the type of reaction and balance the equation:  $\text{Cu} + \text{O}_2 \rightarrow \text{CuO}$
2. Classify the reaction, predict the products, balance the equation and write the net ionic equation for  $\text{Cu}(\text{s}) + \text{AgNO}_3(\text{aq}) \rightarrow$
3. Calculate the percent yield if you started with 1.56 g of copper wire and recovered 0.88 g of copper.
4. What was the color of  $\text{CuO}$ ?

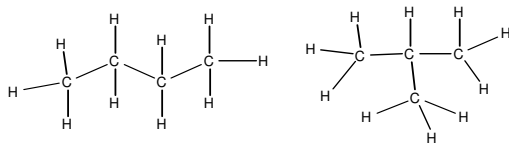
Titration of Fake Vinegar

In general: Be able to perform the four steps for the calculation of a titration. Review the experiment and your results. Know what was in the buret, what was in the titrating flask and in general how the titration was performed.

1. During a titration of a 10.00 mL sample of acetic acid ( $\text{CH}_3\text{COOH}$ ), the endpoint was reached after adding 15.67 mL of 0.100 M NaOH.
  - A) Write a balanced equation for this titration
  - B) How many moles of NaOH were added?
  - C) How many moles of  $\text{CH}_3\text{COOH}$  were present in the sample?
  - D) What was the concentration (M) of the  $\text{CH}_3\text{COOH}$  in the sample?

Representing Chemical Structures

1. Are the following compounds isomers, the same compound or neither? (*Two compounds are isomers if they have the same molecular formula, but different structure.*)



2. Draw a **flat** picture of a six carbon alkane with the longest possible chain of carbon atoms. Indicate the name and formula. Then rearrange the carbon chain to form an isomer.

longest chain

isomer

# of C in main chain	name
1	methane
2	ethane
3	propane
4	butane
5	pentane
6	hexane

name: \_\_\_\_\_ formula: \_\_\_\_\_

3. Draw a perspective line drawing and Haworth projection for *cis*-1,2-dichlorocyclopentane (question 3, postlab).
4. Draw **flat** structures for two isomers of dibromopropane ( $\text{C}_3\text{H}_6\text{Br}_2$ ).
5. What is necessary for a carbon to be chiral?