Chemistry 1515L Week 5

Graduate Teaching Assistant

Contact Information

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Note on YSU Computer Usage Policy

The computers in the YSU General Chemistry labs are to be used only for school-related activities and to help you with experiments.

They are not to be used for surfing inappropriate, non-school-related websites; that would be a direct contravention of the on-campus YSU code of conduct.

Since you log in with your student email ID, whatever you look at during class is stored under your account, which we have access to.

For further details, see:

http://www.ysu.edu/thecode.pdf
# Week 5: Percentage of KClO₃ in a Mixture

- KClO₃ decomposes upon heating as follows:
  \[ 2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2 \]

- When a known mass of KClO₃ is decomposed what solid remains (KCl) can be weighed and the difference is the weight of O₂ that was lost from the sample.
  \[ \text{Weight of O}_2 = \text{Weight of KClO}_3 - \text{Weight of KCl} \]

- Once we know the weight of oxygen, we can calculate the moles of KClO₃ that we started with. If we begin with a mixture of KClO₃ and NaCl we can calculate the amount (percentage) of KClO₃ in that unknown mixture.

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# Cleaning the Test Tube

- Your Pyrex test tube needs to be as clean as possible and dry in order for this experiment to work well. Wash the tube with soap and water and drain off as much liquid as possible. You then heat the test tube over a low flame in order to dry it for use. Be careful here. If you heat it too quickly with too hot of a flame the tube will crack.
Weigh your clean, dry test tube then add the unknown sample that is made up of KClO₃ and NaCl. Reweigh the tube then clamp it near the top of the tube as shown on the left. Heat the sample from the top down and not from the bottom of the tube to avoid any rapid buildup of gas and a possible explosion.

Heating the Test Tube

- You may have to use one of the available Meeker burners to ensure that all of your sample melts. These burn hotter than regular Bunsen burners so "waft" the burner past the sample as shown in the video below, i.e. do not simply place the burner under the sample directly as the tube may crack.
You may have to use one of the available Bunsen burners to ensure that all of your sample melts. These burn
higher than regular Bunsen burners so hold the burner past the sample as shown in the video below, i.e. do not
simply place the burner under the sample directly as the tube may crack.

Pre-lab Info for this week

You must look at the short video related to next week as this experiment can easily go wrong if you are
not paying attention.

The Final Sample

The final sample will be a colorless solid that needs to be weighed. Remember that the test tube is still very hot. Let it cool down before you
touch it. Weigh the tube and then heat and weigh again until you get a
constant weight.

For Next Lab Session:

- Read all of the material available related to next week’s experiment (Molecular Weight of a Vapor).
- Email me with any concerns.