

Combustion of Candy

Ultra S'mores in a Test Tube!

Chemicals and Equipment Needed

- KClO_3 – F4
- 2 gummi bears – L3
- Large test tube – P4
 - Look for one with signs it's been used before
- Short ring stand and buret clamp– J1
- 2 weigh boats – A3
- Scoopula – U1
- Long forceps – U2
- Bunsen burner – T
 - Use propane torch for a room without methane (A4)
- Striker – U2
- Blast shield – next to J

Hazards

- KClO_3 is a strong oxidizer. The flame produced by the reaction is very bright, and can lead to afterimages if one stares directly at it.

Preparation

- Measure 6 g KClO_3 into one weigh boat, cover with aluminum foil and label.
- Place 2 gummi bears in the other weigh boat.
- Fit the test tube on the ring stand at a $\sim 45^\circ$ angle.
- On delivery: transfer the KClO_3 to the test tube, set the burner underneath, adjusting the height of the test tube as needed, and set the blast shield between the demonstration and the audience.
 - **DO NOT AIM THE TEST TUBE INTO THE BLAST SHIELD.** The blast shield is not meant to contain the demo, just protect the audience in case of an accident.
- Use of the in-bench hood is recommended. This demo produces a lot of water vapor, and could be read as smoke by a fire system, so some form of ventilation is needed.

Presentation

- Instruct your students not to stare at the flame, as it can cause afterimages.
- Light the burner and gently heat up the KClO_3 , until it turns into a clear liquid and starts boiling.
- Use the forceps to drop a gummi bear into the test tube and step back. This reaction is very vigorous!!
- Smells like camp!



Clean-Up

- Wash the residue down the sink with plenty of water, scrub test tube well. If necessary, fill test tube with water and soap and heat in a water bath. If the carbon residue builds up too much, we can dedicate a new test tube.

NOTES:

- When you need to replace the gummi bear stash, buy the super cheap store brand ones and let them sit out for a week to get stale (so they don't stick to the sides of the test tube)

