Flaming Cheetos

Purpose

To demonstrate an exothermic reaction with the use of O_2 and Cheetos.

Materials

Round bottom flask (250 – 300 mL)	Liquid N_2
Vacuum adaptor	Cheetos
Stopper with hole	Bunsen burner
Dewar	Tongs
Ring stand/clamp	Hot/Cold Gloves
400 mL Beaker	

Procedure

Preparation of Liquid Oxygen:

1. Assemble the glassware as shown
2. Fill the dewar with liquid nitrogen.
3. Turn on the oxygen and lover the round bottom flack into the dewar.
4. Make sure the oxygen is turned on enough so that there is a gentle flow exiting through the hole in the stopper.
5. As the oxygen is being formed, be sure to check that the liquid nitrogen level is maintained near the top of the dewar. If there is not enough liquid nitrogen, the gas will not cool enough and no/little liquid oxygen will form.
6. This process will take ~30 min, the oxygen will be formed in the round bottom flask and has a light blue color.

Presentation:

7. Pour the liquid oxygen from the round bottom flask into the 400 mL beaker
8. Light the Bunsen burner, and insert a cheeto into the flame till it can burn independently.
9. **Using extreme caution** drop the flaming cheeto into the liquid oxygen and **immediately step back**.
10. Watch as the liquid ignites and burns brightly. Avoid looking directly into the flame
11. Adding more Cheetos will allow the reaction to continue until the liquid oxygen is completely used up.

Safety

1. Liquid oxygen is EXTREMELY dangerous and should be handled with the upmost care.
2. The beaker is very hot after the demo and should be allowed to cool slightly before removing with hot/cold gloves. It can still cause burns through the gloves.

3. The beaker in which the reaction takes place can shatter, and care should be taken to protect from any possible glass shards.

Disposal

Any remaining Cheetos that aren't completely charred can be put back into the bag and used for this demo in the future.