

Fireworks Balloons

H₂ + Minions = Explosion!

Chemicals and Equipment Needed

- H₂ tanks
- 1-3 balloons – **V3/4**
- 1-3 tall ringstands with iron rings – **J**
- Sizing rings – **on tanks**
- String – **Z**
- Powder funnel – **P4**
- Scoopula – **U1**
- Ear goggles – **V3**
- Candle-on-a-stick – **next to A**
- Matches or lighter – **U1**
- Chemicals for fireworks (usual)
 - Magnesium powder (white) – **F4**
 - Boric acid (green) – **Dessicator on J**
 - SrCl₂ (red) – **Dessicator on J**

Preparation

- Fill the balloons ~30 minutes before class.
- Insert the powder funnel into the neck of the balloon, and add a small scoop of solid to the balloon. Like 1/2 t. Use a new powder funnel and scoop for each solid.
- Fill the balloon(s) with **ONLY** H₂ to the 5.4L size (grey ring). Label the balloon at the bottom, near the knot, with the identity of the solid.
- Tie the string above the knot of the balloon. Thread the string through the iron ring and tie it to the base of the ringstand, adjusting the ring as needed to hold the balloon upright.
- Close the valves and bleed the regulator.

Presentation

- **You MUST wear ear protection!**
- **You MUST have the students cover their ears with cupped hands!**
 - Warn them that failure to cover ears or plugging instead of cupping can lead to damaged eardrums.
 - Students want to film the demo for themselves, but they cannot do that and properly cover their ears at the same time.
 - Refuse to do the demo unless everyone covers their ears
- Put on your own ear goggles and light the candle.
- Hold the candle out at arm's length and touch it to the top of the balloon
- **BOOM!**

Clean-Up

- Make sure to pick up as many balloon pieces as you can find.

NOTES: Only use full balloons for the lecture halls. For classrooms, make half-size balloons.

Ordering: H₂ tank – Hydrogen Industrial 197 cu ft, 98270

SP19 – tried a small amount of methanol in the balloon as well to help with the flame, but there was slightly too much fire