

# Dancing Green Goblin

## Burning the Methyl Ester of Boric Acid

### Chemicals and Equipment Needed

- d-H<sub>2</sub>O (1-L bottle)
- Boric acid – **E2**
- Methanol – **R3**
- Medium test tube – **P4**
- Rubber stopper to fit test tube – **U3**
- 300 mL beaker – **Q2**
- Large watch glass – **P3**
- Glass baking dish – **Q4**
- Microspatula – **U1**
- Wooden splint – **U1**
- Matches – **U1**



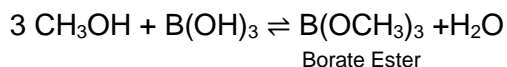
### Preparation

- Put a microspatula of solid boric acid to the test tube, and then pour in ~2 mL methanol. Tilt back and forth or flick with your finger to dissolve the acid. Put in the rubber stopper and place the test tube in the 100 mL beaker.
- **On delivery:** pour some d-H<sub>2</sub>O into the baking dish to cover the bottom, and set the watch glass on top of the water. Place a 1 L bottle of d-H<sub>2</sub>O near the dish. These measures are for safety, in case the fire spreads or needs to be extinguished quickly.

### Presentation

- Pour the solution onto the watch glass. Light a wooden splint with the matches.
- “The nice thing about these borate esters is that they burn with a true green flame. Just like normal fire, but green instead of orange. This looks very cool and one has to see it oneself in order to fully appreciate.”
- Let flame burn itself out or pour d-H<sub>2</sub>O on to extinguish

### Equation:



### Clean-Up

- Dump water out of the baking dish, clean glassware