

Whoosh Bottle

Purpose

To demonstrate a rapid combustion reaction that shows the large amount of chemical energy released when igniting an alcohol.

Materials

Empty plastic 1 Gallon chemical container (“Whoosh bottle”)

Candle lighter

Rubber stopper that fits bottle

40mL Ethanol

Ethanol squirt bottle

Procedure

Preparation

1. Make sure the bottle you’re using is completely dry – even very small amounts of water in the bottle may ruin the effect
2. Pour 40mL of Ethanol into the whoosh bottle and tightly cap it with a stopper
3. Vigorously shake the bottle for at least 15 seconds
4. Put the bottle on its side and quickly roll it back and forth for another 15 seconds – the goal is to coat as much of the interior of the bottle as possible with Ethanol as well as to evenly mix up air and Ethanol gas contained in the bottle
5. Open the bottle and pour out excess Ethanol, then quickly re-cap the bottle to retain as much vapor as possible.
6. Always provide a squirt bottle with extra Ethanol in case the lecturer requesting the demo would like to add more

Safety

Ethanol is flammable and should be handled with care. Be sure to move the Ethanol squirt bottle and any excess Ethanol a safe distance away from the Whoosh bottle when lighting it.