

Cloud in a Bottle

The materials to make a cloud in a bottle are relatively easy to obtain. What you need is a two liter bottle, some isopropyl alcohol, a bike pump, and a stopper. The difficult piece is to obtain a stopper that will fit over the two liter bottle while allowing you to pump air into the bottle. The idea is to have a small amount of isopropyl alcohol in the bottle, pump air into the bottle and create a high pressure system (because the stopper won't let the air out), and once the stopper is removed a cloud is formed in the bottle. This is especially useful for younger ages who might have a hard time believing that a cloud is made of liquid. They can clearly see the liquid in the bottle and the resultant "cloud" in the bottle. The reason that isopropyl alcohol is used is that due to some of its physical properties it makes a much nicer looking cloud than water. Also, it is relatively easy and cheap to obtain. Some pictures of my setup and the cloud are seen below.



Figure 1: The materials used for this experiment.



Figure 2: The pump end with a stopper on it.

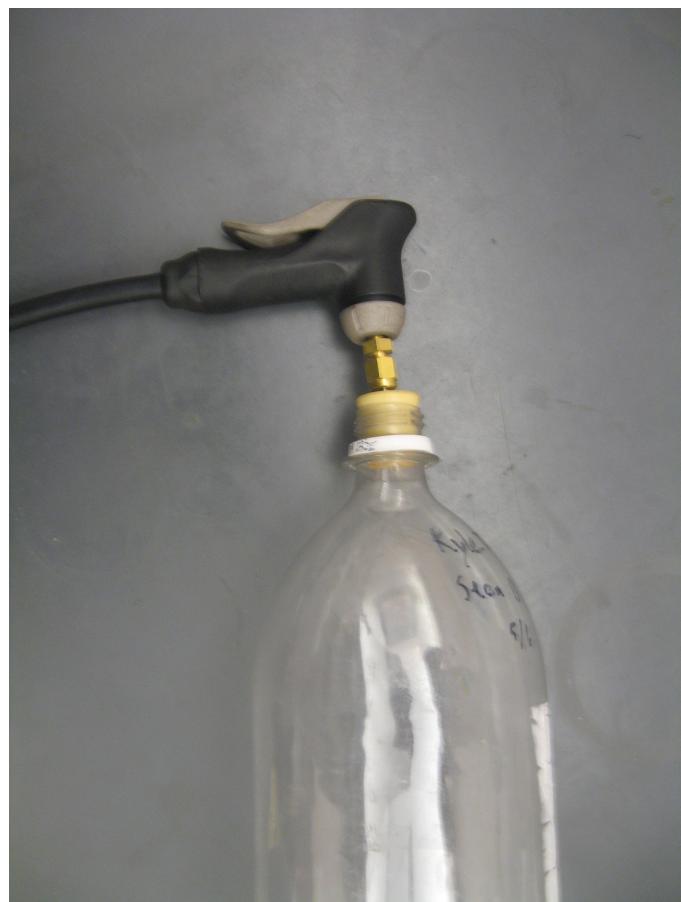


Figure 3: The pump end and the bottle. The stopper prevents air from entering or leaving the bottle from other than the bike pump.



Figure 4: The cloud made in the bottle after adding a little isopropyl alcohol, pumping the bottle up and removing the stopper.