**6: Fire and foam**

Some chemical reactions will release a gas. For example, some metals will react with an acid to make hydrogen gas, which is lighter than air, and which burns. When a gas is made in a liquid containing detergent, the bubbles formed make a froth.

**Instructions:**

1. Use a squeeze dropper to put 2mL of purple liquid (Condy’s crystals, or potassium permanganate) into the reaction well (ice cube tray).
2. Use another dropper to put 2mL of dissolved washing soda (sodium carbonate) in another well.
3. Add two or three drops of detergent to each well
4. Add 2mL of hydrogen peroxide to the well with the purple liquid
5. Add 2ml of vinegar to the other well.
6. Light a wax taper, and then blow it out to leave a glowing end – touch the glowing end onto the bubbles in the first well.
7. Relight the taper if necessary, blow it out and put the glowing end onto the bubbles in the second well. Oxygen gas will make a glowing ember burst into flames, but carbon dioxide gas puts a fire out – which was which?
8. CAREFULLY Put 2mL of hydrochloric acid into another well, and add two drops of detergent
9. Drop a small zinc coated nail into the well.
10. Relight the taper, and touch it to the bubbles while it is still alight. Which gas was being produced?
11. Empty the liquids into the waste bucket, and then rinse the tray in the bucket of water, so that all is ready for the next person.