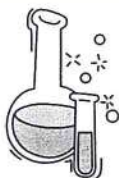


Solutions and Solubility – Experiment # 15: MAKING A “FLOWMOTION” TUBE

Objective: To observe interesting flow patterns in a fluid.

Materials:

- Liquid hand soap containing glycol stearate, not glycol distearate (some, but not all, brands of Softsoap will work)
- 20 oz. plastic soda bottle, or other suitable container
- Food coloring



Safety Precautions: None

Procedure:

1. Fill about one-fourth of the bottle with liquid soap.
2. Add 5 drops of food coloring.
3. Slowly fill with water to avoid suds. Fill to the brim.
4. Screw cap on tightly and shake until well mixed.
5. Invert the bottle to observe an interesting swirling pattern.



Explanation: The interesting patterns that develop when your bottle is inverted are due to adding much more soap that can be dissolved in the water. As a result, the water flows past these undissolved soap particles, creating interesting flow patterns. The food coloring makes these patterns more visible.

This same effect is visible in commercially available “Flowmotion” tubes, which are made from similar materials. You can also observe the swirls in a bottle of V-8 Splash fruit drink. The color swirls are even mentioned on the label, where it is noted they are a natural phenomenon. The swirls are likely produced by fruit juices that are not fully dissolved in the drink. As a result, the remaining liquid flows past this undissolved liquid, creating the swirling effect.

