

Surfactant Lab

Theory:

Purpose: To observe an unusual surface property of water that results from hydrogen bonding.

Materials

- Shallow dish or Petri dish
- Water
- Paper clip
- Rubber band, approximately 2 inches in diameter
- Micropipets or droppers (2)
- Vegetable oil
- Liquid dish detergent

Procedure

1. Thoroughly clean and dry the dish.
2. Fill the dish almost full with water. Dry your hands.
3. Being careful not to break the surface, gently place the paper clip on the water. Observe what happens.
4. Repeat Steps 1 and 2.
5. Gently place the open rubber band on the water.
6. Slowly add oil drop by drop onto the water encircled by the rubber band until that water is covered with a layer of oil. Observe for 15 seconds.
7. Allow one drop on dish detergent to fall onto the center of the oil layer. Observe the system for 15 seconds.

Data: Write you qualitative observations here

Discussion:

1. What happened to the paper clip in Step 3? Why?
2. If a paper clip becomes wet, does it float? Explain your answer.
3. What shape did the rubber band take when the water inside it was covered with oil? Why did it take the observed shape?
4. Describe what happened when dish detergent was dropped onto the layer of oil?

Conclusion: What were the results and why did they occur?