

Showing Viscosity with Marbles

Instructions

Materials:

Methanol

Water

Glycerin

3 Graduated cylinders

3 Marbles

Wooden Ruler

Set Up:

1. Fill the graduated cylinders with equal volume of methanol, water, and glycerin.
2. Drop a rubber stopper into each graduated cylinder, this will keep the marble from hitting the bottom of the glass cylinder.
3. Place a wooden ruler over the 3 graduated cylinders and place the marbles onto the groove of the ruler.

Demo Procedure:

1. Point out that the solutions increase in viscosity from methanol to water to glycerin.
2. Center the marbles over the cylinders.
3. With one quick motion, turn the ruler and drop the marbles into the 3 graduated cylinders.
4. The marbles in methanol and water fall very quickly and may be hard to tell them apart.
5. It is very apparent that the marble falls slowest in glycerin.

Disposal: Pour the liquids in the graduated cylinder through a colander to catch all the solid items. The items can be cleaned and reused. The liquids can be poured down the drain with the water running.