



# Seeing Is Believing!



**Topic:** Viscous properties of polymer solutions

**Courses:** General Chemistry, Organic Chemistry

**Text References:** McMurray Fay 23.15

**Setup:**

- 2 beakers
- Acetone
- Poly(ethylene glycol) (PEG), molecular weight of  $4 \times 10^6$  ([www.teacherssource.com](http://www.teacherssource.com), \$39.95 for enough for 150 demos)
- Food coloring

**Procedure:**

1. Put some PEG into one beaker
2. Then add acetone to dissolve the PEG
3. Add food coloring to make the solution visible
4. Pour the solution into the second beaker, noting the dramatic increase in viscosity

**Observation:** The addition of a small amount of PEG causes a dramatic increase in viscosity.



**Explanation:** The long chain polymer makes an enormous difference in the solution viscosity because the polymer chains get tangled up with one another.