

Polyurethane

“The Helping Hand”

Purpose

To demonstrate the production and solidification of polyurethane polymer.

Materials

Mountains in Minutes (hobby kit – Solutions A and B)	disposable beaker (100 or 200 mL is plenty)
latex glove	2 small plastic cups
food coloring	disposable stick for mixing

Procedure

Preparation

1. Measure equal volumes of Solution A and B into plastic cups (10 mL each is plenty).

Presentation

1. Add a drop or 2 of food coloring to solution A.
2. Pour the solutions together and stir.
3. Pour the mixture into the latex glove and mix by massaging the glove. Continue until you have the developing foam distributed evenly through the fingers. Then lay the glove on the paper and observe.
4. Once the foam has hardened you can give one of your students a hand with their chemistry!

Additional Information

1. Variation: The components can simply be mixed in the disposable beaker and set on the paper. The foam will form and overflow the beaker onto the paper.
2. Solution A contains polyether polyol, a blowing agent, a silicone surfactant and a catalyst.
3. Solution B contains a polyfunctional isocyanate.
4. The general reaction is:



Disposal

The solid can be disposed of in the trash. Any of the remaining solutions can be completely reacted and made into the foam, allowing for easier cleanup.

Reference

Shakharshiri, Bassam. Chemical Demonstrations, Volume I, 1983