

# Disappearing Water

## Purpose

To illustrate the absorbing power of the polymer found in diapers.

## Materials

- Acrylic sodium salt polymer (A.S.A.P.), diaper powder, potassium polyacrylate
- Styrofoam cup
- Bottle of water
- Piece of cardboard

## Safety

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| <ul style="list-style-type: none"><li>• Read the SDS sheet for acrylic sodium salt polymer.</li><li>• Wear safety glasses and gloves.</li><li>• Water/powder may fall out of cup.</li></ul> |
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## Procedure

1. Cover the bottom of a white Styrofoam cup with a thin layer of ASAP powder prior to class.
2. Show the class that the cup is empty by tilting it towards them. (The diaper powder is white and as a result cannot be seen.)
3. Pour a small amount of the bottled water (~10 mL) into the cup.
4. Glance in the cup to check if all the powder was wetted by water. If not, add some more water.
5. Place a piece of cardboard over the top of the cup and then invert the cup.
6. Place the cup over a student's head and then remove the cardboard.
7. Allow the student to look up and then reveal the empty cup to the class.
8. The addition of water can be repeated several times, but be careful near the end or someone may get wet.

## Results

- The diaper powder turns to a damp white gel, which remains stuck to the bottom of the cup upon addition of water.

## Follow-up Teaching Notes

- Diaper powder absorbs ~900 times its own mass of water.

## Connections

- Polymers.

## Extension

- Have students design a lab to determine the absorbing capacity of the powder and/or what conditions affect absorbance.

## Disposal/Clean-up

- The cup and contents can be disposed of in the garbage.