



California State University

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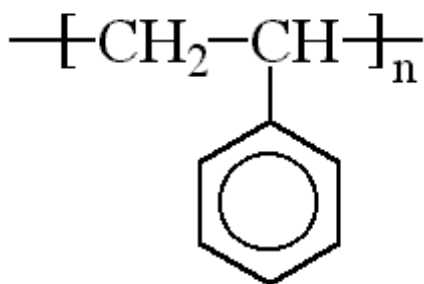
The Magical Cups

Introduction:

How many cups can you stack without them falling over? Ten, fifteen? More? Well, do you think you can stack as many cups while they're melting! Styrofoam cups dissolve when they're placed in acetone because Styrofoam is made up of molecules, called polymers. Acetone loosens these molecules up so that they no longer hold the air. Once this happens the Styrofoam no longer stays solid, and melts into goop!

Do you still think you can stack a lot of cups while they're melting into goop? Let's put your cup stacking skills to the test! Do you think you can beat your friend? Let's find out!

Structure of Styrofoam



Materials:

- Acetone
- A lot of Styrofoam cups

Safety:

- Always wear eye protection and gloves when doing chemistry experiments!

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- Acetone can cause a mild skin irritation if it gets on your skin.
- Smelling too much acetone can cause you to feel dizzy or drowsy.

Procedure:

1. Pour about 100 mL of acetone into two 300 mL dishes.
2. Place Styrofoam cups upside in the acetone.
3. Stack the cups as fast as you can in 1 minute!
4. Experiment with different type of Styrofoam (e.g., peanut packing foam, packing foam, etc.)
5. Have a competiton to see who can melt 10 foam cup the fastest

Data and Observations:

How many cups were you able to stack in 1 minute?	
Which type of Styrofoam was the fastest to melt?	

Questions:

What are Styrofoam cups made out of?

What liquid was used to melt the cups?