

Special Effects Using Household Chemicals

Materials Demo 1 (Fake Snow):

- 1- Cup with lid
- 2- Sodium Polyacrylate (fake snow)
- 3- Cup for water

Be sure to wear eye protection and gloves when doing this experiment. Wash hands thoroughly after handling the sodium polyacrylate. Do not ingest sodium polyacrylate and keep away from eyes.

Procedure:

- 1- Measure approximately 3 to 5 ml of sodium polyacrylate (sample in centrifuge).
- 2- Pour sodium polyacrylate into same cup.
- 3- Measure 1/3 cup of water in tall cup.
- 4- Pour water into small cup that has sodium polyacrylate.
- 5- Put lid on cup containing sodium polyacrylate and water.
- 6- Slowly shake cup with lid on, containing sodium polyacrylate sample.

What did you observe?

Explanation about polymer:

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MAKING FAKE SNOW

● Carbon
● Oxygen
● Sodium

SODIUM POLYACRYLATE

Hydrogens on carbon atoms implied; each carbon has 4 bonds.

Sodium polyacrylate is a super-absorbent polymer that can be used to create fake snow. It is a white powder which can absorb 300 times its own weight in water.

When dry, the chains of the polymer are coiled up.

When wet, the polymer molecules dissociate into negatively charged carboxylate ions and sodium ions. The negative charges repel each other, and the polymer expands.

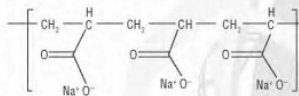
WITHOUT WATER WITH WATER

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By Christine Jaworek-Lopes

What would a movie be without special effects? These days, many special effects are created on a computer. However, you can make some special effects, like snow, and breaking glass, with supplies found in your home.

Movies and TV shows are often produced in areas very different from the climate that is shown. The makers of the movie might need to have a winter snow scene but it is the middle of summer and they are inside a studio. To solve this problem, they have to make fake snow. Hexylene glycol liquid is blown through an artificial snow machine for large snow scenes. In the following activity you will make and observe fake snow on a smaller scale using a different chemical. Four different types of fake snow will be made by combining different amounts of water with a polymer called sodium polyacrylate. A polymer is a long chain of molecules that are made of repeating units of the same arrangement of atoms. The sodium polyacrylate is a long chain composed of many repeats of the structure shown below. This polymer changes as water is added. See if you can find out how it changes.



Chromatography

Materials

1. Coffee Filters / Filter paper
2. Felt tip pens (Black Crayola markers)
3. Cups
4. Water

Procedure - [Watch this experiment!](#)

1. Fold the coffee filter (filter paper) in half.
2. Fold filter paper in half again to make triangular shape
3. Draw a line in a semi-circle about one inch from the bottom. Flip it over and do the same thing on the other side. (Black works well but try other color and note results!)
4. Put a small amount of water into the cup (if you are using a different solvent use that instead)
5. Place the tip of the filter paper into the cup
6. Wait for 15 minutes.

Explanation of Chromatography

Chromatography is based on polarities. Molecules that have a similar polarity to the solvent (water in our case) will travel further than the molecules that do not. Filter paper contains cellulose (the same compound that plants are made of!). This compound pulls water up through capillary action. In this experiment both the water and the ink move through the fibers of the filter paper. Inks in markers are actually made up of different colored dyes. The colors that have a similar polarity to water will move further than the others allowing you to see the different colors.