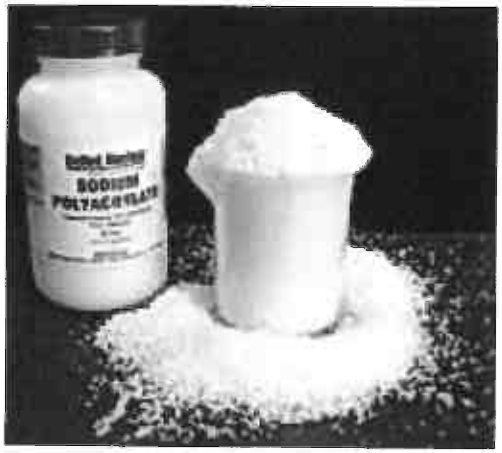
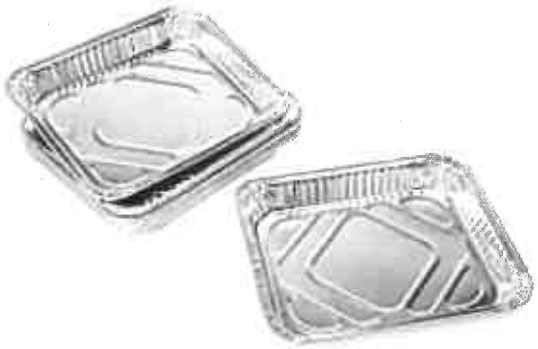
Sodium Polyacrylate

PSS Kit Number 4

Kit Contains

6 Small Spill Trays
8 Big Spill Trays
32 Diapers
3 Jars Sodium Polyacrylate
Lesson Plans





PINT SIZE SCIENCE

SCIENCE SPROUTS

Sodium Polyacrylate (Diaper Material)

MATERIALS NEEDED:

- Spill Trays
- 50 mL Beaker
- Water
- Sodium Polyacrylate
- Paper & Pencil (record questions & results)
- Assessment Recording Sheet

***This investigation takes preparation. Use the trays to minimize clean up.**

- Show the students the sodium polyacrylate powder. Pour approximately 10 mL into the 50 mL beaker. *What do you think will happen when you add liquid water to the solid powder? Why do you think that? Have you seen a reaction like this before?*
- Have a student pour some water into the beaker, and watch as the powder grows and becomes a gel. Flip the beaker over after a minute, and let the sodium polyacrylate gel fall into your hand. Allow the children to look at and touch the gel. *How does the result compare to your prediction?*
- Experiment with how much water the powder will absorb.
- Sodium Polyacrylate gel can be thrown in the garbage at the conclusion of the activity.

Explanation of the Sodium Polyacrylate:

Sodium polyacrylate is a super absorber. It is most commonly used in disposable diapers because of its capacity for fluid absorption. The powder can instantly absorb 500 to 1000 times its own weight in water. Adding table salt will reverse the reaction by dehydrating the polymer. The resulting material will not work again because the salt, NaCl, will destroy the polymer. When you have finished the experiment, the resulting material should be put in the garbage. The material is non-toxic, but if it gets into water pipes or septic systems, it could lead to blockages.

Liquid + Solid = Solid

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