



Biodegradable Packing Peanuts

Corn is an important renewable resource. There are thousands of uses for this valuable crop, not only as food for humans and livestock, but for many other products as well.

Corn starch is a key ingredient in thousands of corn products. It is found in camera film, candles, shoestrings, charcoal briquettes, crayons, detergents, wood products, adhesives, fireworks, medicines, paper, cardboard and biodegradable plastics. Other uses include:



- **Ethanol** - an environmentally-friendly fuel that, when blended with gasoline, reduces carbon-monoxide emissions from vehicles by 25-30%. Using ethanol-blend fuels helps reduce our dependence on foreign oil imports. One acre of corn produces 300 gallons of ethanol.
- **Printing Ink** - Corn-based ink can be used in place of regular printer's ink, which is made from petroleum products - another way to reduce dependence on imported oil!

**These packing peanuts are made almost entirely of corn!
They are totally water soluble and biodegradable!**

Materials Needed:

- Cornstarch
- Measuring spoons
- Corn oil
- Water
- Medicine dropper
- Food coloring
- Microwave
- Sandwich-size re-sealable plastic bag

Procedure:

1. Place a tablespoon of cornstarch in a re-sealable plastic bag.
2. Add two drops of corn oil to the corn starch.
3. Add one and a half tablespoons of water to the oil and cornstarch.
4. Stir the mixture.
5. Add two drops of food coloring to the mixture and stir well.

Scientific Observations:

- What do you notice about your biodegradable plastic?
- Is your biodegradable plastic the same as other students' plastic?
- What could you make with this biodegradable plastic if you let it harden?

Next, microwave your biodegradable plastic for 20-25 seconds on high.

- What happens to your plastic?
- Form your plastic into a ball and describe what it will do.

Thanks to Illinois Agriculture in the Classroom.