Gelatin Plastic
Investigation #3

Description
Easy peasy! Try making some bioplastic, using a simple recipe.

Materials
- Gelatin or Agar
- Water
- Glycerin
- Food Coloring
- Stove
- Cooking pot
- Spoon
- Whisk
- Candy thermometer
- Measuring spoons
- Cookie sheet
- Clay mold, optional
- Wax paper

Procedure
1) Cover a cookie sheet with wax paper. Set aside.
2) In a cooking pot, combine 4 teaspoons gelatin with \( \frac{1}{4} \) cup water and 1/2 teaspoon glycerin.
3) Heat the mixture on the stove at medium to high heat, stirring constantly.
4) You may need to whisk the mixture to get rid of the clumps.
5) Add several drops of food coloring.
6) Monitor the temperature of the mixture with a candy thermometer.
7) When the mixture begins to get foamy, at 95 degrees Celsius or 203 degrees Fahrenheit, remove from heat.
8) Continue to stir the mixture.
9) Pour the plastic mixture on the paper or into a clay mold.
10) Allow the plastic to dry for 2 days.
11) You can try shaping the plastic while it is still warm, and then let it set.

My Results

Explanation
Gelatin is a protein collected from boiling bones or ligaments in water, and is a natural polymer that consists of long chains of molecules linked together. Gelatin can be combined with other ingredients like glycerin to make a material with many of the same properties as oil-based plastics have. Because this gelatin substance is made from organic materials, it is a kind of bioplastic. You can also substitute the gelatin with agar, which comes from seaweed.

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