

AQ26 - Arctic Activities

Make Plastic From Milk

Making Plastic from Milk: A Fun Experiment!

Let's dive into a fascinating science experiment: creating plastic from milk!

This activity demonstrates how different materials respond to chemical changes and offers a tangible example of polymer formation.

You will need

1 cup of milk (full fat works best)
4 tablespoons of white vinegar (acetic acid)
Microwave safe bowl,
Sieve/Strainer
Spoon,
Paper towels,
Food colouring (optional).
Cookie cutters or chocolate moulds (optional)

Instructions

- 1) Heat the milk in the microwave for about 1-2 minutes, until it's hot but not boiling.
- 2) Carefully remove the hot milk and slowly stir in the vinegar. You'll notice the milk starts to curdle and separate into solid clumps (curds) and a watery liquid (whey). Continue stirring gently until the separation is complete.
- 3) Pour the mixture through a paper towel-lined strainer or cheesecloth to separate the curds from the whey. Squeeze out as much excess liquid as possible.
- 4) Knead the curds together with your hands, like dough. If desired, add a few drops of food colouring to the curds at this stage and knead it in evenly.
- 5) Finally, shape the curds into your desired form, such as a small disc, or pack them into cookie cutters or chocolate moulds to form shapes.
- 6) Place the shaped plastic on a clean paper towel to dry and harden, which can take 24-48 hours. Once dry, you'll have a piece of homemade plastic made from the protein in milk.



Plastic Pollution: A Global Crisis

While creating plastic from milk is a fun and educational activity, it's crucial to acknowledge the serious issue of plastic pollution. Traditional plastics, derived from petroleum, are incredibly durable and resistant to

degradation, which makes them accumulate in the environment at alarming rates. This pollution manifests in various forms, from massive garbage patches in the oceans to microplastics contaminating our water sources and even entering the food chain. Alternative materials, like the ones you have just made, are a possible way of reducing our reliance on more harmful plastics.