

3: Bouncing Custard Balls

Using a simple cross-linking reaction between two polymers, a bouncy ball can be made.




eye protection
must be worn

What you will need

15 cm³ PVA glue
measuring cylinder
borax (sodium tetraborate Na₂B₄O₇·10H₂O)
custard powder
test tube
test tube rack
100 cm³ beaker
glass stirring rod
spatula

eye protection

What you do

- 1  Make up a borax solution by adding a spatula of borax to a test tube containing 10 cm³ water.
- 2 Pour 15 cm³ PVA glue into the beaker.
- 3 Add 2 spatulas of custard powder and 1 spatula dry borax.
- 4 Add 0.5 cm³ of the borax solution and stir vigorously. Keep stirring until the mixture is smooth.
- 5 Remove the mixture from the beaker, shape it into a ball and work it between your hands for about 2 minutes. You should feel the ball gradually becoming more elastic.
- 6 Test the ball to see how well it bounces.

Wash your hands afterwards.

Troubleshooting:

If the ball is brittle, you have used too much borax.

If the ball is too soft and not elastic, you have not used enough borax.

Note:

Your custard balls will dry out and lose their bounce unless you keep them in a plastic bag.

Eye protection must be worn.

