

FANTASTIC PLASTIC: MAKING AND TESTING FOAM RUBBER

Foam rubber is made by trapping bubbles of gas in the rubber as the rubber latex cross-links and becomes solid. Here you will make your own foam rubber and test it for 'squashiness' compared with ordinary rubber.

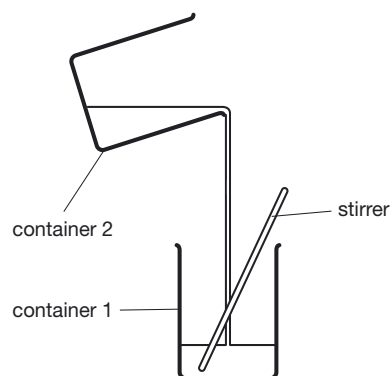
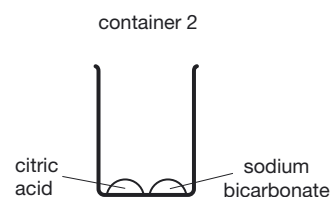
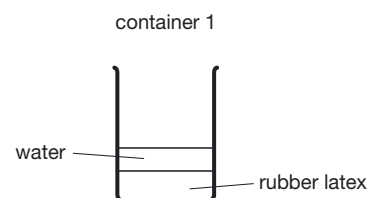
Task A

Making your foam rubber

1. Pour 10 cm³ rubber latex solution into a container such as a small beaker or plastic cup. Make sure the container has a small diameter base (less than 5 cm).
2. Add 10 cm³ water to the rubber latex solution.
3. In another container put 1 spatula of sodium bicarbonate powder.
4. Add 1 spatula of powdered citric acid to the sodium bicarbonate powder and mix well.
5. Pour the sodium bicarbonate powder/citric acid powder mix into rubber latex solution and stir quickly to mix then leave it to foam.
6. When it has finished foaming, drop the foam rubber cushion into water to wash it.
7. Leave the foam rubber cushion for 30 minutes to dry and harden before using it.



Some people have allergic reactions to liquid rubber latex. Wear protective gloves to avoid touching the liquid rubber, and wear eye protection. Do not inhale the fumes, which contain ammonia.



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Task B

Making a block rubber sheet

8. Pour 10 cm³ rubber into the 5 cm diameter base container.
9. Mix 1 spatula citric acid powder with 10 cm³ water to make citric acid solution.
10. Pour the citric acid solution into the rubber latex solution and stir to mix. The rubber latex will cross-link and form a solid in the bottom of the container.
11. Wash the solid rubber in water and leave for 30 minutes to dry thoroughly before testing.

Task C

Comparing your rubber samples

12. Measure the thickness of the two samples.
13. Place a 100 g mass on the top of each sample and measure the thickness of the sample by measuring the distance between the bench and the 100 g mass.
14. Increase the mass and measure the thickness of the sample each time.
15. How much force does it require to squash the foam rubber to the same thickness as the solid rubber?

