

Silly Putty

RECIPE

For a small batch follow the recipe below (it's halved). Using one glue bottle, two separate teams can cooperate and work next to each other.

- 1/2 bottle of school glue (about 4oz, 118ml)
- 1/2 bottle of water (118ml)
- 1/2 teaspoon (2.5ml) borax mixed into about 1/4 cup (59ml) of water
- food coloring (optional)

ACTION

Here's what's happening: Glue contains a polymer called polyvinyl alcohol, or PVA. In the glue-water mixture, these polymer chains slip and slide past each other easily. But when you add the borax solution to the glue, it connects one PVA molecule to another in a process known as cross-linking. As more chains link up, they no longer slip and slide. Instead, they form a large mat that resembles a net or a spider's web. This is what gives the material its puttylike qualities.

DIRECTIONS

Pour your glue into mixing bowl. Fill the empty glue bottle to about 1/2 full with water. Add to bowl. Mix it up. At this point you can add a few drops of food coloring.



Slowly add the borax/water mixture while stirring. It should start to look slimy.



Keep mixing with your fork. (OPTIONAL add food coloring at this point)



To make it easier, transfer this mix to a baggie so you can mix squish and mix it using your hands. Once it's mixed, you may need to dry off the excess water with a paper towel [if the proportions did not quite add up exactly]. Or just give it to the kids to play with; it will slowly dry/firm up.

DISCLAIMER

Technically this is a Silly Putty imitation as the real Silly Putty is moderately dangerous to make.

“Silly Putty is a toy based on silicone polymers which display unusual physical properties. It bounces, but breaks when given a sharp blow and can also flow like a liquid. It contains a viscoelastic liquid **silicone**, a type of Non-Newtonian fluid, which makes it act as a viscous liquid over a long time period but as an elastic solid over a short time period. It was originally created by accident during research into potential rubber substitutes for use by the United States in World War II. “Wikipedia

REFERENCES

Really you can just type Silly Putty in your browser and get a significant number of good references

http://en.wikipedia.org/wiki/Silly_Putty

http://chemistry.about.com/od/everydaychemistry/a/sillyputty_2.htm

<http://www.howstuffworks.com/silly-putty4.htm>