

Experiments with Nano-Tex the Nano Fabric

Introduction

With nanotechnology, scientists are now able to create materials with enhanced properties such as stain resistance and wrinkle resistance. In this activity we will investigate the stain resistant properties of Nano-Tex fabric.

Material

Swatches of Nano-Tex fabric

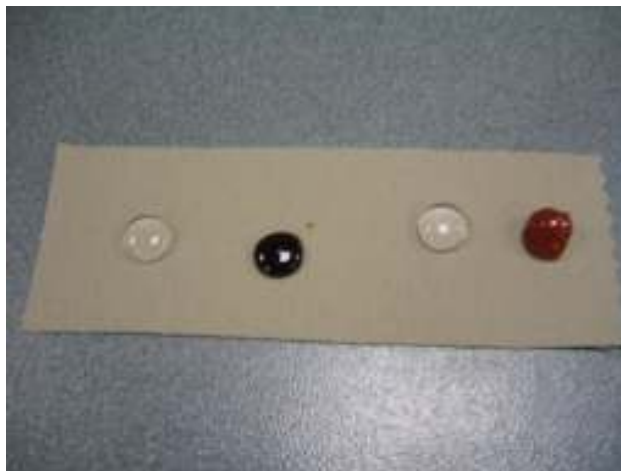
Swatches of untreated cotton fabric

Scissors

Water

Several stain agents

Paper towels



To Do and Notice

First feel both the treated and untreated fabric with your hands. Is there a noticeable difference in the texture of the two fabrics? Take a look at the two fabrics. Is there a visible difference between the two? Now spend some time investigating the stain resistance of the fabric. After applying various stain agents, try both wiping the fabric clean with a paper towel, and rinsing the fabric clean with water. Be sure to test both the treated and untreated fabric and let the stain sit for a few minutes before rinsing. Record your detailed observations including variables such as the type and amount of stain agent used as well as how long the stain was allowed to sit.

You might want to investigate other properties as well as stain resistance, such as wrinkle resistance, durability and water resistance.

What's going on?

Nanofabric is fabric that has been treated with nanotechnology. The fabric has been coated with a solution of nanofibers that are 1/1000 the width of a human hair. These fibers act as whiskers, or peach fuzz creating a cushion of air on the surface of the fabric. Like velvet or peach fuzz, these fibers cause water to bead up and roll off.

Therefore the nanofiber treated fabric resists water and water based stains without changing the look or feel of the fabric.

How did the properties of Nano Tex fabric compare to the untreated fabric? Is Nano-
Tex really more stain resistant?

Do other properties suffer as a trade-off?

Was the fabric really good at repelling some stains, but not others?