Silly Putty

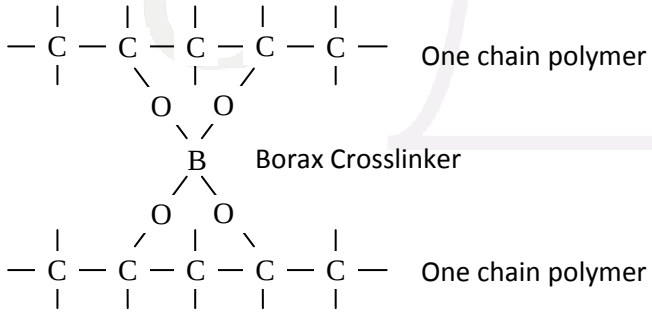
Silly Putty has many purposes. You can bounce it, throw it, decorate with it, stretch it or make imprints with it.

Besides its numerous recreational purposes, Silly Putty has been used to secure tools aboard Apollo 8, cast handprints of gorillas, and help relieve stress.

How does Silly Putty work?

Silly Putty is a polymer made from silicone oil and boric acid. A polymer is a chain of molecules that are all tangled up. Silly Putty has flexible molecules that, when smooched by fingers, slide over each other and cause the material to flow. Therefore, Silly Putty is considered an elastomer. An elastomer springs back to its original shape after being twisted, pulled, or compressed. Besides silly putty, an example of an elastomer is a rubber band or a car tire.

The liquid latex (Elmer's glue) that you are using in this experiment contains small globules of hydrocarbons suspended in water. The silly putty is formed by joining the globules using sodium borate (a cross-linker). Very weak intermolecular bonds that provide flexibility around the bond and rotation about the chains of the cross-linked polymer hold the silly putty together.



Crosslinker with two chains of polymer

For the Silly Putty recipe used here, please visit our web site at:
http://mrsec.umd.edu
Click on *News* to find our Maryland Day information.