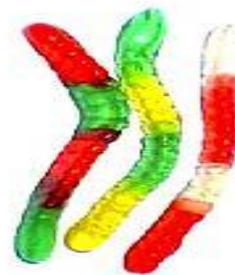


Gummiworms Fact Sheet

The word **polymer** can be broken into two parts, “poly” means *many* and “mer” means *parts*. A **polymer** is made of many parts called “monomers.” Gummiworms are a particular type of polymer which has been “cross-linked.” Cross-linked polymer chains are tangled together which makes them strong.



Gummiworms are examples of cross-linked polymers.

COOL FACTS

- Gummiworms are made by “tangling” polymer chains together; the more “tangles,” the stronger the chain.
- Scientists use polymers to make carpet and some clothes that we wear.
- It’s not padding that keeps babies in disposable diapers dry, it’s a polymer! Small polymers inside of diapers have the ability to hold water.
- Silly Putty is a polymer, invented by an engineer in the 1940s. Originally called Nutty Putty, it can stretch to many times its original size!
- Some polymers can remember their shape. When you stretch a rubberband and release it, it goes back to its original shape.
- Certain polymers do not melt. Firefighters use these polymers in their equipment to keep themselves safe while they fight fires.

FAQ’s

Q: What are some other examples of “cross-linked” polymers?

A: Not all cross-linked polymers are edible like gummiworms. Silly Putty is a cross-linked polymer and so are the rubber tires on a car. Cellulose is a natural cross-linked polymer that makes plants strong (it contains hundreds of “tangles”).

Q: How does silly putty work?

A: Silly putty is an elastic polymer which means it is a polymer that is able to remember its shape. When you stretch out something that is elastic, like a rubber band, the polymers stretch. When you let go, the substance snaps back to its original shape.

Q: How do the polymers inside of a diaper keep a baby dry?

A: Diapers contain a polymer which absorbs water. This polymer can absorb about 50 times its weight inside of a diaper.

Q: Is it true that some polymers do not burn?

A: Some cross-linked polymers have very strong ties together. As a result, when the rubber gets hot, the rubber molecules cannot move past each other. This is why it doesn't melt.

RELEVANCE TO OUR LIVES: Polymers influence much of technology. Cross-linked polymers are particularly useful because of their strength. In diapers, cross-linked polymers have the strength to hold water. Also, tires on cars can handle a lot of mileage without breaking down. Cross-linked polymers can even be heat resistant such as the polymers used to make a firefighter’s uniform.

RESOURCES:

Hands on Plastics: <http://www.handsonplastics.com/>

Recycle City: <http://www.epa.gov/recyclecity/>

The Macrogalleria – a cyberwonderland of polymer fun:

<http://www.psrc.usm.edu/macrog/index.htm>