

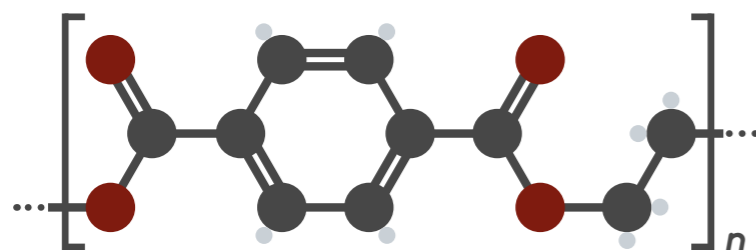
The Chemistry of a Football Shirt

Shirt material

Polyester

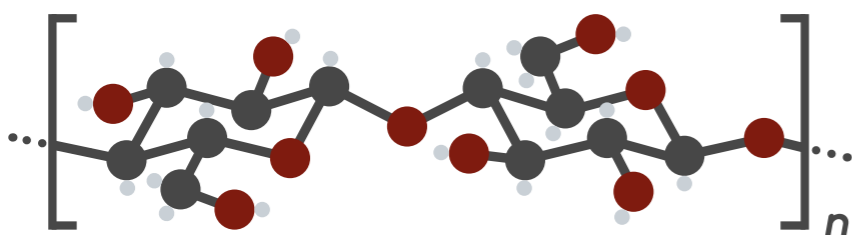
Polyesters are commonly used in textile applications. They are polymers, very large molecules built up from smaller molecules. The synthesis of polyesters involves a condensation reaction between an alcohol and a carboxylic acid.

KEY: ● Carbon ● Oxygen ● Nitrogen ● Hydrogen ○ Variable



Polyethylene terephthalate

Most common type of polyester used in textiles. Occasionally combined with **cotton** (below) to form polycotton



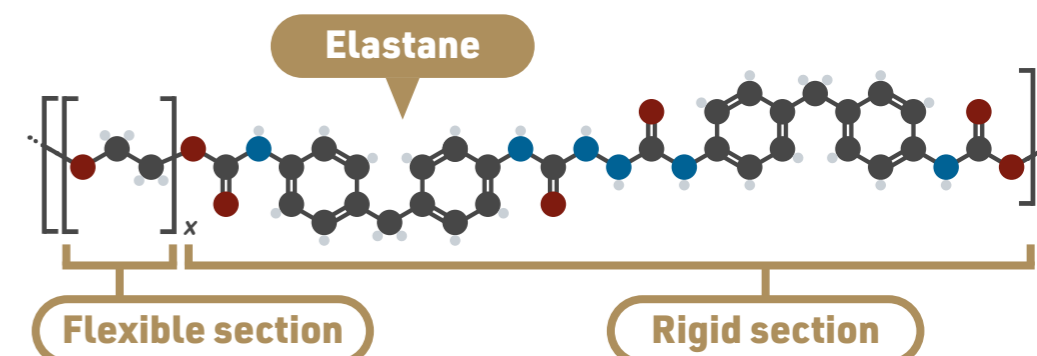
Polyester is durable, lightweight, resistant to creasing, and only absorbs 0.4% of its weight of water. It has a good 'wicking' effect – sweat is carried along the fibres, rather than absorbed, and can evaporate.



Shirt material

Elastane

Also known as spandex or lycra, elastane is another polymer often incorporated into football shirts. It resists approximately 600% elongation before rupturing, adding strength and elasticity to shirts. However, it is not as 'breathable' as other materials.



Names & numbers

Polyurethane

The printed player names, numbers, and sponsor logos on the shirt are often made of polyurethane. These are thermally bonded to the shirt.

