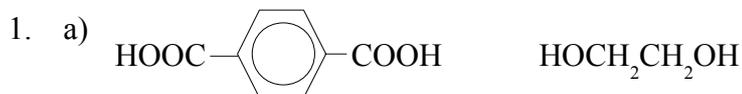


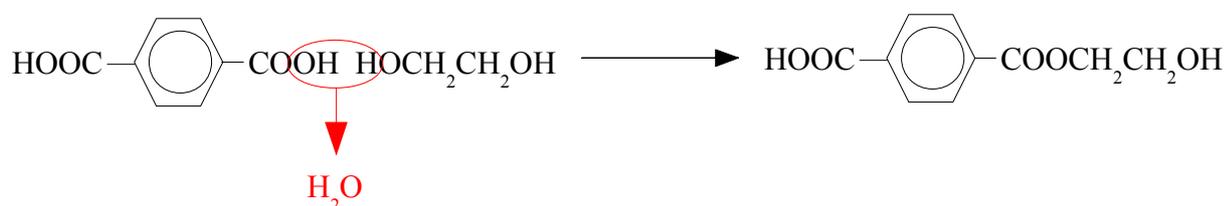
Chemguide – answers

ESTERS: POLYESTERS



It doesn't matter how you have drawn the first structure as long as the COOH groups are opposite each other on the ring. I have drawn it with them horizontally because it makes it much easier to see how the polymer forms. You must, of course, make sure that you have joined the carbon (and *not* the hydrogen) in the COOH group to the ring.

b) Polymerisation is the joining up of lots of small molecules to make a big one. A condensation reaction is one in which a small molecule is lost when two other molecules combine together. In this particular case, every time an ester link is formed to make the polyester, a molecule of water is lost as below.



You must show the continuation bonds at each end of the short bit of chain that you have drawn.

d) As a fibre (e.g. Terylene) to make clothes. For making plastic (PET) bottles.

e) Polyesters contain lots of ester links (RCOOR'), and ester links are hydrolysed by sodium hydroxide solution to give a salt of the acid (RCOONa) and an alcohol (R'OH). When this happens in a polyester, the polymer chains are obviously broken up into small molecules.