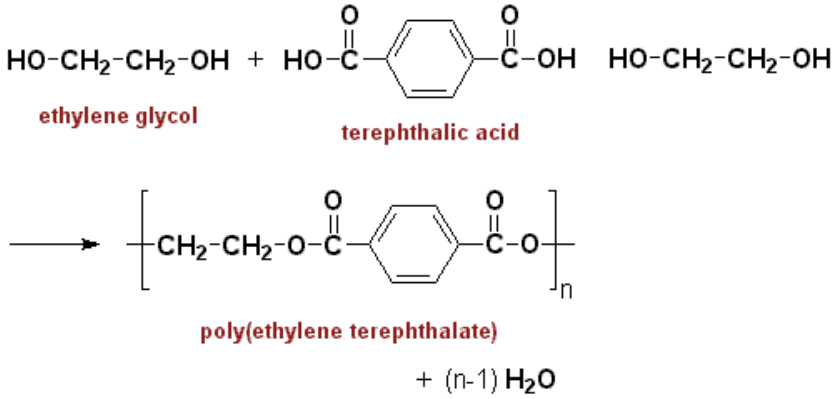
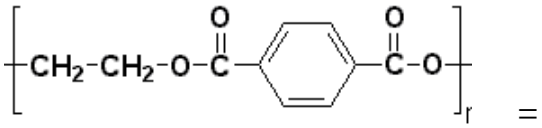
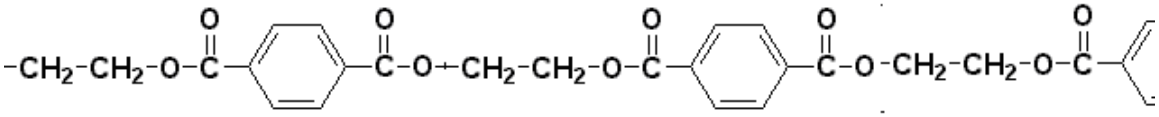
4.6 FORMATION OF ESTER POLYMERS

a)One can form **polyester polymers** by reacting multiple molecules and covalently linking them together by ester linkages. Water is produced as a product along with the ester polymer and these types of polymers are called **condensation polymers.**

Polyethylene terephthalate(PET or PETE) is a common example of a polyester made from the dicarboxylic acid, terephthalic acid (paraphthalic acid), and ethylene glycol (the active ingredient in antifreeze). It is used in plastic bottles and a variety of clothes, suits, curtains. As a fiber, PETE is often labeled as Dacron and is frequently interspersed with fibers of wool or cotton in clothes and other cloth products.



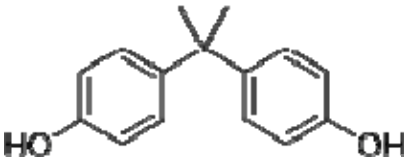




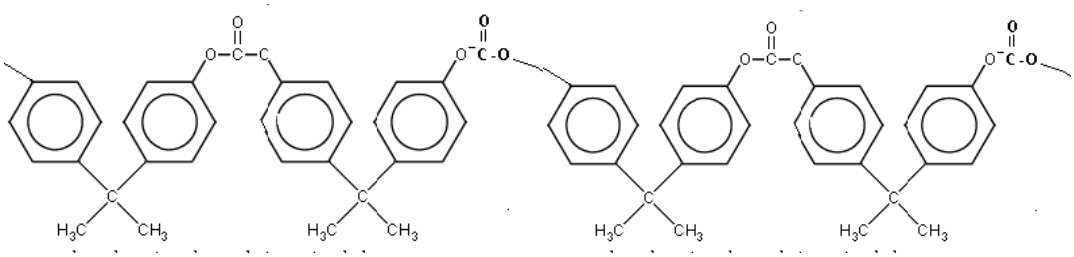
In plastics recycling PETE is labeled as #1.

b)Polycarbonate plastics

Most polycarbonate plastics are made from the monomer, bisphenol-A.



The bisphenolA monomers are then linked with carbonyl (C=O) groups to make **polycarbonate** plastics.



Polycarbonate plastics are light and very strong and flexible; they have been extremely widely used to make water bottles, baby bottles, epoxy resins inside cans, as well as CDs and DVDs.

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There is increasing concern that small amounts of bisphenol A that leach out of these bottles and can linings may be **endocrine disruptors**. They do not have a separate recycling number of themselves and get labeled as 7 (others).

inspiredwater.org

epicplastic.com

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Food Safety Bill's Ban on BPA Resisted