

Macromolecules

Large molecules where hundreds of thousands of atoms are joined together

polymer

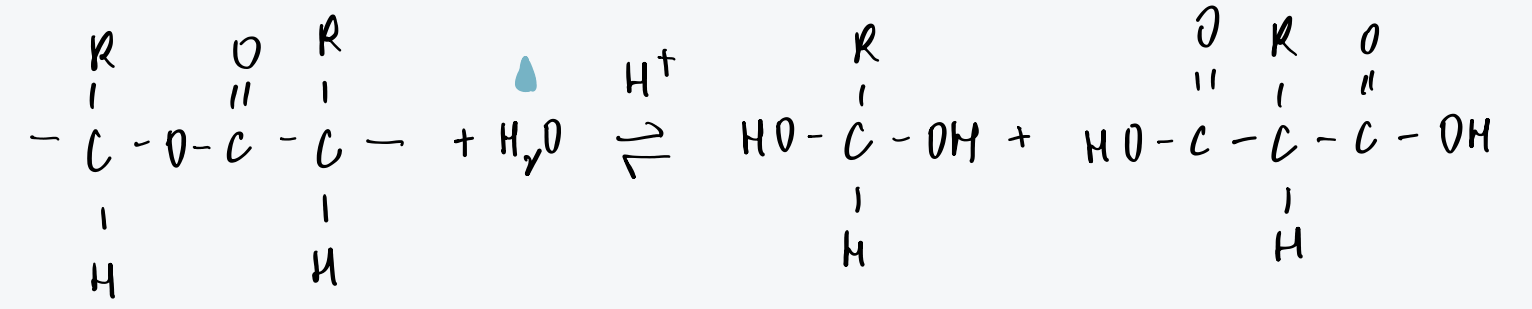
Macromolecule joined by linking many small repeating units

natural

synthetic

process of reacting monomer molecules together in a chemical reaction to form polymer chains

at a particular temp
Depolymerisation
(hydrolysis) \leftrightarrow condensation

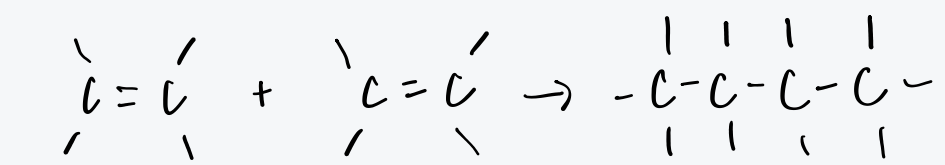


(any unsaturated)

Addition polymerisation

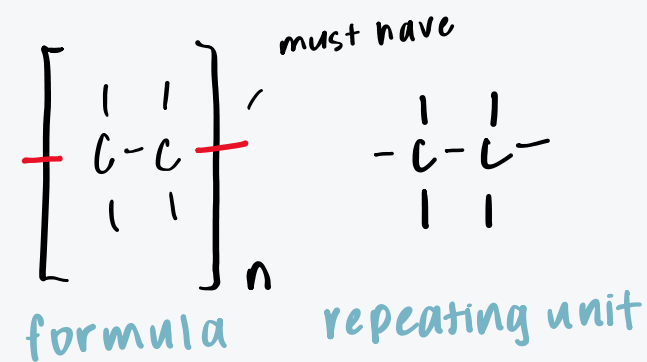
- monomer units join together without losing any molecules or atoms. It involves monomers which have a degree of unsaturation
- Double bonds break to form single bonds

Ethene - plastic, clingwraps



monomer
(unsaturated)

polymer
(saturated)



Poly(monomer name)

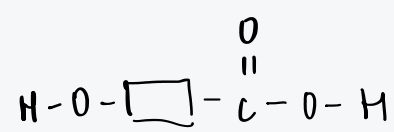
Condensation polymerisation

Condensation polymerisation involves a series of condensation reactions between monomers which contain two functional groups at each end of the molecule. A small molecule (e.g. H₂O or HCl) is eliminated each time a monomer-monomer linkage is formed.

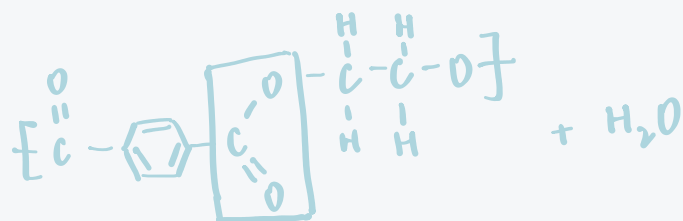
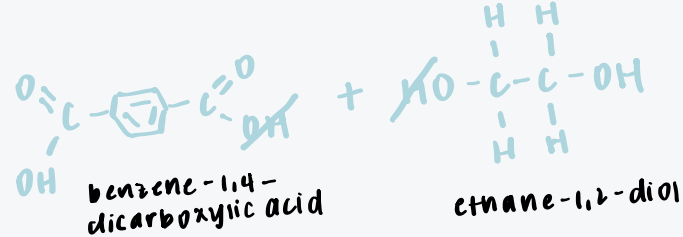
- has 2 func grps

polyester

-COO-

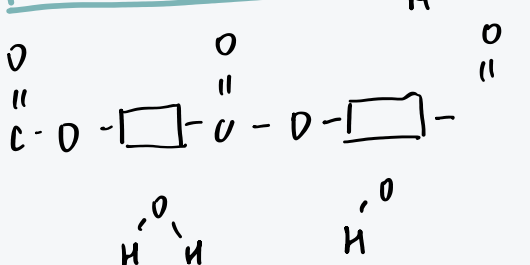


Terylene



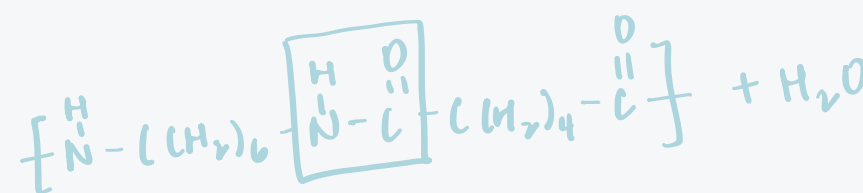
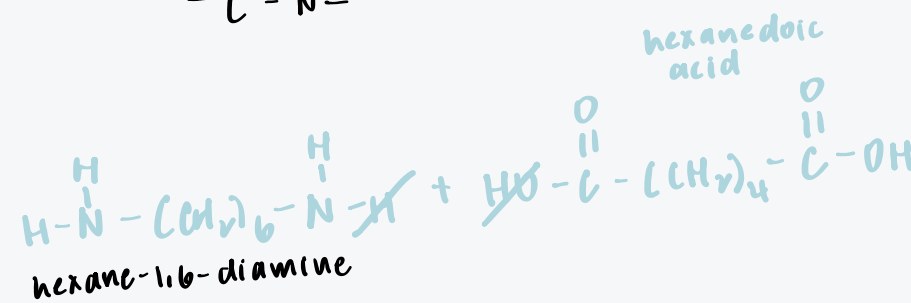
clothing

Hydroxyl acids

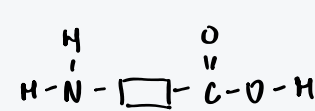


polyamide

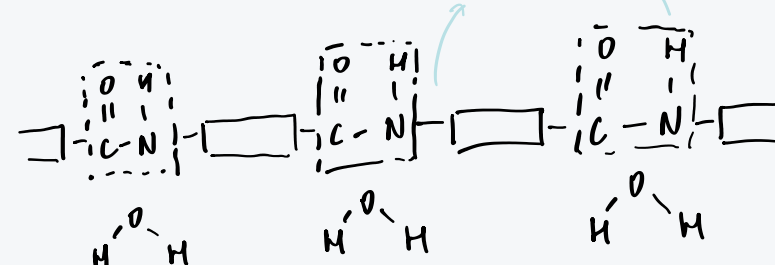
-COOH- or -CONH-



Amino acids



can polymerise itself



Nylon - textiles & ropes
* under specific conditions