

Two general types of polymerization

- ❑ Addition polymerization
- ❑ Condensation polymerization

Terylene formed by condensation
polymerization

Condensation polymers

- ❑ Where molecules join together while losing small molecules as by products
- ❑ In addition polymerization, monomers react to form a polymer without formation of by products

Synthetic polymers

- ❑ Nylon (polyamide)
- ❑ Terylene (polyester)

Terylene formation

- ❑ Made when monomers are combined to form long chain polymer
- ❑ Formed by condensation polymerization
- ❑ There can be more than one monomer unlike in addition polymerization
- ❑ Polyester made by reacting an acid with two COOH groups and an alcohol with –OH group

Terylene monomers

□ Benzene 1, 4 dicarboxylic acid



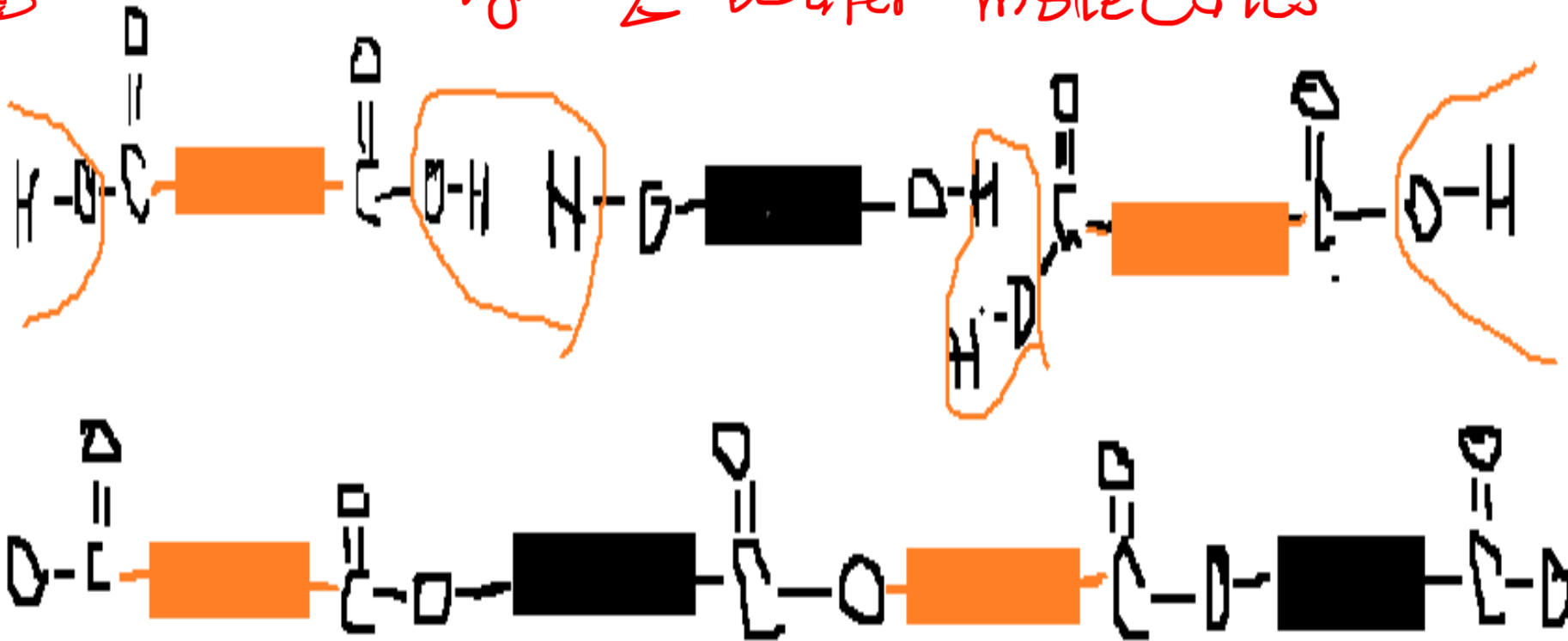
Terylene monomer

□ Ethane 1, 2 diol (ethylene glycol)



Structure of Terylene

⇒ condensation polymerization
⇒ removing 2 water molecules

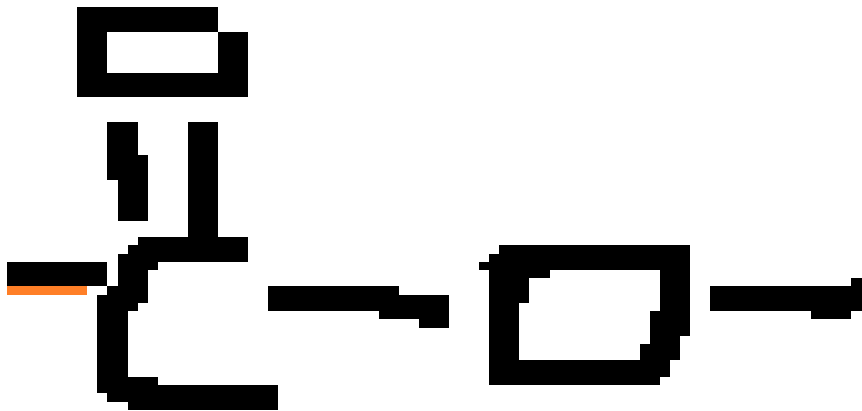


Terylene

molecule ~~is~~

Has an ester linkage

Has an ester linkage



properties of terylene

- ☐ Very strong fibre
- ☐ Elastic
- ☐ Not injured much with acids
- ☐ Easy to wash and dries fast
- ☐ Suitable at high temperature
- ☐ Insoluble in most organic solvents
- ☐ Resistant to friction

Uses of nylon

- ❑ Making plastic bottles and clothing
- ❑ Making films
- ❑ Making cooling fans
- ❑ Making rot proof materials
- ❑ Making nets, ropes, rain coats,