

35 Polyesters and polyamides – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary

*Write each word three times.***English****Write it 3 times** (English)

diol

dicarboxylic acid

diamine

Amino acids

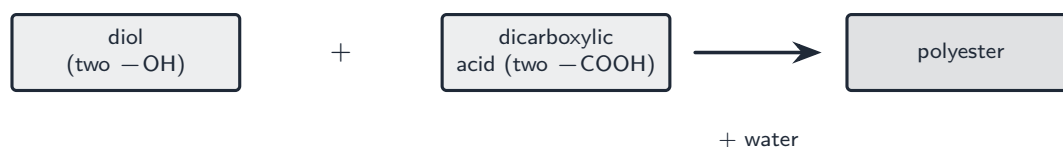
Recall

You can build a polyester or a polyamide from monomers that each have two reactive groups.

New ideas

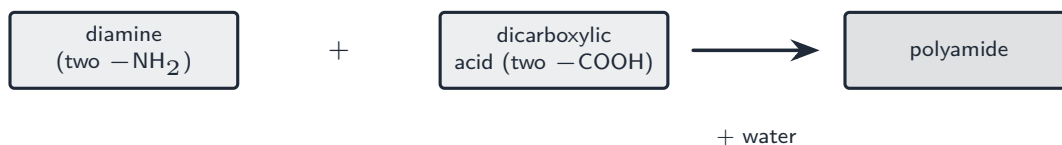
Read these first, then do the Practice.

■ 1 Making a polyester



Make a polyester from a **diol** (two -OH groups) and a **dicarboxylic acid** (two -COOH groups). Water is released.

■ 2 Making a polyamide



Make a polyamide from a **diamine** (two -NH_2 groups) and a dicarboxylic acid. **Amino acids** join this way too – proteins are natural polyamides.

Watch out: a *polyester* comes from a diol + a dicarboxylic acid (ester links); a *polyamide* comes from a diamine + a dicarboxylic acid (amide links). Both release water at each link.

Practice

Try these in order.

35.6 What two monomers make a *polyester*? [1]

35.7 How many -OH groups does a *diol* have? [1]

35.8 What two monomers make a *polyamide*? [1]

35.9 What small molecule is released in both? [1]

35.10 Proteins are natural examples of which polymer? [1]

35.11 Challenge. An amino acid has *both* an -NH_2 group and a -COOH group. Explain why this lets amino acids join into a polyamide (a protein). [2]
