

Polymers Quiz PDF

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Which of the following are challenges in recycling polymers? (Select all that apply)

- Polymer diversity
- High energy requirements
- Limited recycling facilities
- All polymers are biodegradable

Which of the following is a characteristic of thermoplastic polymers?

- They harden irreversibly upon heating.
- They can be reshaped with heat.
- They are always biodegradable.
- They are always natural.

What is the main environmental concern associated with polymers?

- High production cost
- Toxic emissions during production
- Non-biodegradability
- Limited availability of raw materials

What are the benefits of using smart polymers? (Select all that apply)

- They can respond to environmental stimuli.
- They are always cheaper to produce.
- They can be used in drug delivery systems.
- They are always biodegradable.

Discuss the environmental impact of synthetic polymers and suggest potential solutions to mitigate these impacts.

Discuss the role of polymers in biomedical applications, providing specific examples of their use.

What are nanopolymers, and what are some of their potential applications in modern technology?

Which property is NOT typically associated with polymers?

- High melting point
- Elasticity
- Conductivity
- Solubility in water

What is the basic building block of a polymer?

- Atom
- Monomer
- Ion
- Molecule

Which of the following is a natural polymer?

- Nylon
- Polystyrene
- Cellulose
- Polyethylene

What type of polymerization involves the loss of small molecules like water?

- Addition polymerization
- Condensation polymerization
- Chain polymerization
- Radical polymerization

Describe the difference between thermosetting and thermoplastic polymers, including examples of each.

Which of the following polymers are typically biodegradable? (Select all that apply)

- Polylactic acid (PLA)
- Polyethylene
- Polyhydroxyalkanoates (PHA)
- Polystyrene

What type of polymer structure involves chains interconnected by bonds forming a network?

- Linear
- Branched
- Cross-linked
- Random

How do cross-linked polymers differ from linear polymers in terms of their properties and applications?

What are common applications of polymers in everyday life? (Select all that apply)

- Packaging materials
- Construction of bridges
- Clothing
- Electronic devices

Explain the process of addition polymerization and provide an example of a polymer formed through this process.

Which of the following is a synthetic polymer?

- Silk
- DNA
- Polyethylene
- Starch

Which properties can vary widely among different polymers? (Select all that apply)

- Strength
- Elasticity
- Color

Thermal conductivity

Which of the following are examples of biopolymers? (Select all that apply)

- Proteins
- Nylon
- Polysaccharides
- Polystyrene