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Crash Course Chemistry #45: Polymers

Name: _____ Date: _____

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1. The earliest commercial polymer was made from _____, a flammable solid derived from cotton and nitric acid.
2. _____ are large molecules made from repeating units called monomers.
3. The simplest monomer used in polymer production is _____, also known as ethylene.
4. When ethene undergoes polymerization, it becomes _____.
5. Polyethylene is considered a _____ plastic because it can be melted and reformed.
6. _____ are thermoset plastics that cannot be remelted and reshaped after curing.
7. Introducing _____ between polymer chains converts polyethylene into a thermoset polymer.
8. The strength of polyethylene can be altered by changing the _____ of its polymer chains.
9. Replacing one hydrogen in ethylene with chlorine forms _____, commonly called vinyl chloride.
10. Polychloroethene is more widely known as _____.
11. Polymerizing propene produces the common plastic known as _____.
12. The fluorine-rich polymer known for its non-stick properties is called _____ or by its brand name Teflon.
13. In _____ polymerization, a free radical starts a chain reaction where no by-products are formed.
14. In condensation polymerization, a common by-product formed when two monomers combine is _____.
15. The natural polymers made from amino acids are known as _____.

Crash Course Chemistry #45: Polymers KEY

1. The earliest commercial polymer was made from **nitrocellulose**, a flammable solid derived from cotton and nitric acid.
2. **Polymers** are large molecules made from repeating units called monomers.
3. The simplest monomer used in polymer production is **ethene**, also known as ethylene.
4. When ethene undergoes polymerization, it becomes **polyethylene**.
5. Polyethylene is considered a **thermoplastic** plastic because it can be melted and reformed.
6. **Polyurethane** are thermoset plastics that cannot be remelted and reshaped after curing.
7. Introducing **cross-links** between polymer chains converts polyethylene into a thermoset polymer.
8. The strength of polyethylene can be altered by changing the **length** of its polymer chains.
9. Replacing one hydrogen in ethylene with chlorine forms **chloroethene**, commonly called vinyl chloride.
10. Polychloroethene is more widely known as **polyvinyl chloride (PVC)**.
11. Polymerizing propene produces the common plastic known as **polypropylene**.
12. The fluorine-rich polymer known for its non-stick properties is called **PTFE** or by its brand name Teflon.
13. In **addition** polymerization, a free radical starts a chain reaction where no by-products are formed.
14. In condensation polymerization, a common by-product formed when two monomers combine is **water**.
15. The natural polymers made from amino acids are known as **proteins**.

15 Questions

Answer Key Included

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