

Synthesis of Nylon

1. **Question 1:** What are the two main starting materials used in the synthesis of nylon in the experiment? Provide their chemical names and formulas.
2. **Question 2:** Describe the type of reaction that occurs when adipoyl chloride and hexamethylenediamine react to form nylon. What is the product of this reaction?
3. **Question 3:** Explain the significance of the numbers "6,10" in Nylon-6,10. What do these numbers represent in terms of the structure of the polymer?
4. **Question 4:** What properties make nylon a suitable material for applications such as clothing, carpets, and industrial uses?
5. **Question 5:** If a student wanted to modify the synthesis of nylon to create Nylon-6,6 instead of Nylon-6,10, what changes would need to be made in the starting materials? Provide a brief explanation.