Happy International Women’s Day March 8.
Celebrate Women in Science.

Kevlar: Invented in the late 1960s by Stephanie Kwolek (often referred to as S. Kwolek, or even not at all), a researcher at Dupont:

Kevlar is a polymer made by this reaction between acid chlorides and amines to form amide linked polymers. It is similar to the synthesis of nylon, which is another polymer with an amide link.

\[
\begin{align*}
\text{Cl} & \quad \text{Cl} \\
\text{C} & \quad \text{O} \\
\text{H} & \quad \text{N} \\
\text{N} & \quad \text{H} \\
\end{align*}
\]

Kevlar achieves its strength from the long, straight, close packed chains and inter-chain hydrogen bonding. It has a tensile strength greater than steel. It is used for bulletproof vests, parachutes, and sails, among other products. In terms of strength, however, spider dragline silk wins hands down, every time.

Nancy Lowry, Professor of Chemistry
Hampshire College  Amherst MA