

## STEPHANIE LOUISE KWOLEK



Born in 1923 to Polish immigrant parents in the Pittsburgh suburb of New Kensington, Pennsylvania.

Father was John Kwolek; he was a naturalist by avocation and took young Stephanie with him as he was exploring the natural world. She attributes her interest in science to him and her interest in fibers to the fashion design work she did with her mother Nellie Kwolek. Her mother told her that she was too much of a perfectionist to work in fashion design as a living. Stephanie then decided to become a doctor.

Stephanie did not have much money for education so after her bachelor's degree she took a position as a temporary employee at Dupont's Buffalo, New York facility in 1946 to earn money for medical school. The rest is indeed history as Stephanie stayed 40 years at Dupont and more as she consulted for years after for Dupont.

Kwolek's work for Dupont led to 16 United States patents. She is the only female recipient of Dupont's Lavoisier Medal for outstanding technical achievement.

Her most extraordinary invention came in 1965. She was part of a team trying to create a stronger synthetic fiber, and according to DuPont, the scientists involved were struggling. Then Kwolek "broke the deadlock," DuPont says, "by devising a liquid crystal solution that could be cold-spun."

The watery substance at first looked like a mistake. The American Chemical Society says: "Most researchers would have rejected the solution because it was fluid and cloudy rather than viscous and clear. But Kwolek took a chance and spun the solution into fibers stronger and stiffer than had ever been created. "What it developed into was Kevlar, a material in body armor that has saved thousands of lives. The substance is also used in tires, helmets, kayaks and spacecraft — not to mention extreme sports equipment.

Kwolek was the fourth woman inducted into the then 113-member National Inventors Hall of Fame in 1994. She was awarded the National Medal of Technology in 1996, the Society of Chemical Industry Perkin medal in 1997, and was inducted into the Plastics Hall of Fame in 1997. She received a Carnegie Mellon Alumni Distinguished Achievement Award in 1998 and was elected a member of the Academy of Engineering in 2001. The Royal Society of Chemistry grants a biennial "Stephanie L. Kwolek Award, "to recognize exceptional contributions to the area of materials chemistry from a scientist working outside the UK".

Stephanie mentored other women scientists throughout her career and into retirement. She was also interested in interesting children in the sciences and developed the Nylon Rope trick in order to take science to the classroom.

[https://en.wikipedia.org/wiki/Stephanie\\_Kwolek](https://en.wikipedia.org/wiki/Stephanie_Kwolek)

<https://www.npr.org/sections/thetwo-way/2014/06/20/323951708/stephanie-kwolek-chemist-who-created-kevlar-dies-at-90>