Polypropylene fiber is a synthetic fiber that is widely used in the nonwoven industry. As a synthetic fiber, it is not derived from plants like cotton, but it is a man-made plastic material and is derived from oil. It was invented in 1954. Polypropylene staple fiber is made by melting polypropylene chips in an extruder and forcing the melted plastic through spinning plates containing thousands of tiny holes. The resulting strands of molten plastic are cooled, stretched, and cut into staple fiber.

Polypropylene is used in several ways in nonwoven plants. It is a commonly used staple fiber in blending and carding machines for needlepunch and thermal bonding lines. It is also used in spunbond lines where chips are extruded into continuous fibers, caught on a traveling conveyor screen, and cooled into fabric. In the melt blowing process, hot, liquid polypropylene is sprayed by high pressure air onto a conveyor to make a fabric of fine denier fibers. Finished polypropylene fabric can also be treated with heat by calenders, infrared heaters, and ovens to impart additional characteristics to the fabric. Polypropylene is a thermoplastic which means that it can be melted, cooled, remelted and cooled again. Polypropylene melts at 320 degrees Fahrenheit, is a tough fiber, and resists many chemicals. It is lightweight, with a density less than water. It does degrade in sunlight, but additives can be put in to lessen the degradation. In its natural state it is a milky-white fiber. However, it can be colored during the spinning process.

“We learn wisdom from failure much more than from success. We often discover what will do, by finding out what will not do; and probably he who never made a mistake never made a discovery.”

Samuel Smiles