One Slippery Character

Nothing sticks against Teflon®

> Teflon is a great example of a serendipitous invention.

In 1938, a DuPont researcher named Roy Plunkett was trying to develop a nontoxic refrigerant. He and an assistant at DuPont's Jackson Laboratory were experimenting with gases related to Freon® refrigerants, using chilled, pressurized cylinders. To their surprise, they found that in one cylinder the gaseous material had become solid.

The gas had polymerized, or bonded, into a waxy white powder, a resin later named PTFE. Rather than discard the apparent mistake, the naturally curious Plunkett ran some tests on the new substance to determine its properties. At the time, the 27-year-old could not have imagined that this material would go on to become one of the best known and most widely used polymers of all time.

Plunkett found the resin to be extremely slippery, chemically stable and resistant to corrosion, with a very high melting point. It is also one of the largest molecules known to science. It showed so much potential for commercial and industrial application that it was assigned to the Plastics division at DuPont for further study.

At first it appeared the material would have limited application because it was so costly to produce. Teflon initially was sold to industry and the military, where its low friction level made it ideal as a coating for machine parts that slide against one another. During World War II, Teflon was extremely useful in the Manhattan Project. In 1945, the product was trademarked as Teflon®, and its manufacturing process was patented.

By the 1960s, Teflon in various forms was in wider use, as a stain repellent in fabrics, as an ingredient in wire insulation and, most famously, as a nonstick coating for cookware.

The first nonstick pan using Teflon, made by a French engineer in 1954, was called Tefal. Seven years later, the first U.S.-based Teflon-coated pan was marketed as "The Happy Pan."

Today, Teflon and its derivatives are found in light bulbs, hair products, wiring insulation, carpeting and furnishings, windshield wipers, eyeglass lenses and countless other products. It even coats the fiberglass roof of the 20-acre Hubert H. Humphrey Metrodome in Minneapolis.

In contemporary conversation, Teflon is often used as a nickname for people—especially elected officials—to whom criticism does not stick. The term was first used in reference to U.S. President Ronald Reagan, who became known as "the Teflon president." President Bill Clinton has also had this term attached to him, as did former British Prime Minister Tony Blair, whom the British press often referred to as "Teflon Tony."

Teflon inventor Roy Plunkett went on to a distinctive career with DuPont, before retiring as director of operations of Freon products in 1975. Over the years he received many honors. He was inducted into the Plastics Hall of Fame in 1973 and the National Inventors' Hall of Fame in 1985. Plunkett died in 1994, at the age of 83. Today, DuPont continues to honor him with an award in his name that recognizes those who contribute important new products using Teflon.