

Guessing the meaning of unknown vocabulary

Teflon® and PTFE: The Days Before Non-Stick Cookware

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While PTFE (brand name Teflon®) is a huge **component** of most non-stick **cookware** in modern kitchens, few know the history of this complex **polymer**, or the **PTFE properties** that make it such a useful addition to our pots and pans.

Much like many scientific and medical **innovations**, PTFE was discovered by a scientist who was in the process of trying to create an entirely different **compound**. While attempting to create a new CFC (chlorofluorocarbon) **refrigerant**, Roy Plunkett found himself **wrestling** with a waxy, slippery substance...he had accidentally created PTFE.

PTFE is a fluoropolymer of high molecular weight, and its hydrophobic nature makes it ideal for creating non-stick, low-friction surfaces. After being used for applications ranging from fishing tackle to coating pipes containing highly-radioactive uranium in the Manhattan Project, it was found that the **PTFE properties** that made it such a useful slippery coating would make it a perfect addition to cookware. Much to the joy of wives and chefs worldwide, the non-stick pan was born.

Chemical structure is what gives PTFE the properties for which it is so well-known: carbon-fluorine bonds and a tight crystalline atomic structure give it superior durability, strength, and thermal stability. PTFE tubing can withstand temperatures exceeding 680°F for limited periods of time - its melting point is 327°F, but its mechanical properties tend to degrade in temperatures exceeding 260°F. PTFE can be used in cryogenic applications, retaining its strength and stability in temperatures as low as -320°F.

PTFE is used in far more applications than cookware. The mouse you're using to read this article may have PTFE feet on its underside, used to reduce the friction between the mouse and the mouse-pad. Because of its slippery nature, PTFE is used as a coating to prevent insect infestation by creating a slick surface to which insects cannot cling. Because of its extreme inertness, PTFE is used for storage and transfer of corrosive chemicals and food/alcohol.

Because of the versatility and exceptional properties of PTFE, it is an incredibly useful polymer in almost every industry. In the modern world, you'd be hard-pressed to find a situation in which you're not in contact with PTFE...and just think - it was all created by a scientist's laboratory blunder.

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About The Author:

I enjoy writing informative articles.

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