Teflon is the trademark name for PTFE, a type of plastic.

If you own any non stick cookware, then you probably use PTFE on a daily basis. You might not realize, as you fry your morning eggs, that PTFE is one of the most [slippery](http://indianapublicmedia.org/amomentofscience/ice-slippery/)materials that can be manufactured. It’s about as slippery as wet ice.

**What makes Teflon so slippery?**

Teflon is chemically similar to another, more common plastic: [polyethylene](http://indianapublicmedia.org/amomentofscience/recycling-plastics/), the material used to make plastic bags and other plastic containers.

Chemically, polyethylene is made from long chains of carbon [atoms](http://indianapublicmedia.org/amomentofscience/anatomy-flame/)with hydrogen atoms bonded to the sides of the chains. To make Teflon, the hydrogen atoms of polyethylene are replaced by fluorine atoms.

**Fluorine Atoms**

It’s the fluorine atoms that give Teflon its slipperiness. Fluorine atoms are physically bigger than hydrogen atoms. Their large size makes them huddle around the central carbon chains in a much tighter formation.

This tight formation works like a kind of chemical armor, protecting the carbon atoms which in turn hold the molecule together.

**Chemical Teamwork**

This [chemical teamwork](http://indianapublicmedia.org/amomentofscience/refrigerate-fruits-vegetables/) between carbon and fluorine makes Teflon extremely chemically stable, and it’s this chemical stability that makes Teflon so slippery.

Foreign substances, like a frying egg, can find no chemical foothold on the fluorine armor, so they simply slide away.

**Never Sticky**

Getting this slippery substance to stick to a frying pan is a bit of a trick.

Teflon is broken into a fine powder and [suspended in water](http://indianapublicmedia.org/amomentofscience/rain/). The pan is then thoroughly cleaned, then roughened by sand-blasting. The Teflon is sprayed onto the pan and baked, causing it to fuse together and lock onto the roughened surface of the pan.

As long as you don’t scratch this protective coating, years worth of fried eggs, melted cheese, burned milk even toffee will slide away effortlessly.

Teflon是PTFE的商标名称，PTFE是一种塑料。

如果您拥有任何不粘炊具，那么您可能每天都使用PTFE。你可能不知道，因为你炒你早上的鸡蛋，是PTFE是最的一个[滑](http://indianapublicmedia.org/amomentofscience/ice-slippery/)可以制造材料。它和湿冰一样滑。

### 是什么让特氟龙如此滑？

铁氟龙在化学上与另一种更常见的塑料相似：[聚乙烯](http://indianapublicmedia.org/amomentofscience/recycling-plastics/)，用于制造塑料袋和其他塑料容器的材料。

化学上，聚乙烯由长链碳[原子](http://indianapublicmedia.org/amomentofscience/anatomy-flame/)制成，氢原子键合到链的侧面。为了制造聚四氟乙烯，聚乙烯的氢原子被氟原子取代。

### 氟原子

正是氟原子赋予了Teflon滑爽性。氟原子在物理上大于氢原子。它们的大尺寸使它们以更紧密的形式挤在中央碳链周围。

这种紧密的形成就像一种化学装甲，保护碳原子，而碳原子又将分子结合在一起。

### 化学团队合作

碳和氟之间的这种[化学团队合作](http://indianapublicmedia.org/amomentofscience/refrigerate-fruits-vegetables/)使得聚四氟乙烯具有极强的化学稳定性，正是这种化学稳定性使聚四氟乙烯变得非常光滑。

像煎蛋一样的异物在氟装甲上找不到任何化学立足点，因此它们只是滑落。

### 从不粘

让这种光滑的物质粘在煎锅上是一个小技巧。

将聚四氟乙烯破碎成细粉并[悬浮在水中](http://indianapublicmedia.org/amomentofscience/rain/)。然后将锅彻底清洗干净，然后通过喷砂处理进行粗糙处理。将Teflon喷到盘子上并烘烤，使其融合在一起并锁定在盘子的粗糙表面上。

只要你不刮伤这种保护性涂层，多年的煎蛋，融化的奶酪，烧焦的牛奶甚至太妃糖都会毫不费力地滑落。