

## Everyday Products Which Contain Fluorochemicals

Most consumers pay very little attention to what is in their purchases, but those who do are aware of the many uses of fluorochemicals. These compounds have found their way into a variety of markets. In addition to being the key ingredients in many medicines, these chemicals are used to synthesize a number of other products.

### ***What are fluorochemicals?***

Fluorochemicals are compounds that contain the periodic element fluorine. Fluorochemicals are easy to manipulate because they are the most chemically reactive element. This is due to fluorine's high electronegativity. These traits make it possible for each fluorochemical to be completely unique.

### ***Fluorochemicals in Dentistry***

Those who doubt the pervasiveness of fluorochemicals in modern life are likely unaware that about 70% of all citizens of the United States have fluoridated water coming out of their tap. The practice of adding fluoride and other related chemicals to drinking water started in America in the time right after the Second World War. Studies from the beginning of the twentieth century confirmed that fluoride helped prevent tooth decay, and some scientists suggested that it be distributed to the general public through the water supply to improve oral health. Today, the decision to fluoridate drinking water is made by municipal governments, but a majority of major cities still carry out this practice despite vocal opposition from those in other developed countries.

In addition to fighting tooth decay through drinking water, fluoride in various forms is found in a number of toothpastes and other oral health products. Its benefits are due to its ability to be absorbed into the teeth allowing it to replace lost enamel. Not only do fluoride compounds make the teeth stronger, but they also disrupt the ability of the bacteria in plaque to make acids.

### ***Fluorochemicals in Medicine***

Derivatives of molecules containing fluorine have also found their way into other types of medicine. In fact, researchers have only recently discovered how some fluorochemicals can become key active ingredients in breakthrough pharmaceuticals. One realm of medicine in which they are pervasive is that of anesthetics. The most common general anesthetics used in the operating room are fluorochemicals. The gasses sevoflurane and desflurane are both stable and non-flammable agents that can enter the blood stream and cause a human to lose consciousness.

Other compounds containing fluorine are found in cutting-edge drugs. They have proven to be important antibiotics and are even useful in the fight against HIV. They seem particularly well suited to being used as part of anti-inflammatory medicines. They also play a big part in many of the most popular SSRI antidepressants. Fluoro-structures are found in Prozac, Celexa, and Emocal, among others. These chemicals change serotonin levels in the brain in an effort to elevate the mood of the patient.

### ***Fluorochemicals in Other Products***

Of course, the pharmaceutical industry is not the only place to find compounds that contain fluorine. Many products contain fluoro-structures. There are also many different applications for fluorochemicals in the realm of science because of its unique properties. The uses of fluorochemicals are as diverse as the compounds themselves.

The unique abilities of certain fluorochemicals make them ideal for the world of agriculture. Some are used to synthesize fast-acting fertilizers. Even sodium fluoride, one of the most popular fluorochemicals in dentistry, can be made into a powerful pesticide in the right concentration. Similarly, corrosive hydrofluoric acid is used in car cleaners and for industrial applications like glass etching.

Fluoropolymers are plastics made of compounds that contain fluorine. The most famous of these is the former non-stick cooking material Teflon. The inertness of these plastics makes them ideal for lubrication and reflective coverings in a number of situations.

Refrigerants like Freon are made using fluorine. Fluorochlorohydrocarbons are environmentally sound replacements for chlorofluorocarbons or CFCs, which were banned because of their role in the depletion of the ozone layer. Fluorine remains in the new, safer compounds because it does not harm the environment.

## ***Fluorochemicals and Daily Life***

Take a moment to think about all of the products that would not be the same without fluorochemicals. Without fluorine, the medical industry would still be struggling with ineffective anesthetics. Many people would not have life-saving medicines. There would be no refrigeration or air conditioning. Oral health would be in decline, and agricultural progress would be stagnated. Thankfully, the world has abundant fluorine to use in these many essential applications. Hopefully, these important elements will continue to yield new technologies for the improvement of daily life.

### **About the Author**

Stephanie Larkin is a freelance writer who writes about issues and topics pertaining to the use of chemicals such as [Fluorochemicals](#)

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