



What are PFAS?

Defining PFAS/Fluorotechnology

Per- and polyfluoroalkyl substances, often referred to as PFAS or Fluorotechnology, are a diverse group of chemistries characterized by the strong bond between fluorine and carbon. Because of this strong bond, PFAS provides products with strength, durability, stability and resilience. These properties are critical to the reliable and safe function of a broad range of products that are important for industry and consumers, such as the cellphones, tablets and telecommunications systems we use every day to connect with our friends and family; the aircraft that power the U.S. military; solar panels and turbines critical to alternative energy development; and medical devices and technology that help keep us healthy. PFAS are vital to enabling our lives in the 21st century.

A Diverse Universe of Chemistries

PFAS include a variety of different chemicals with different properties and characteristics. ***Therefore, the hazard and risk profiles of various PFAS are different.***

Fluoropolymers:

One key type of PFAS in use today is fluoropolymers, a type of specialty material. Because of their physical characteristics, fluoropolymers are not toxic or water soluble. They provide products with a unique combination of attributes—durability, heat and chemical resistance and superior dielectric properties—that allow them to perform under the toughest conditions. Key uses of fluoropolymers include:

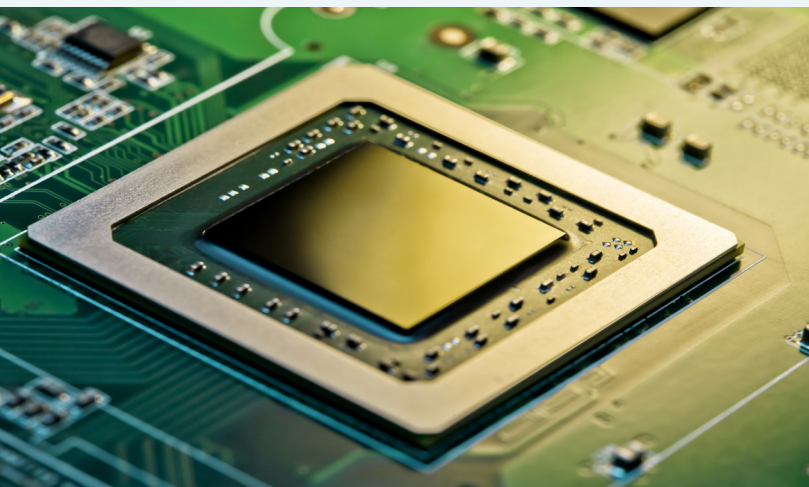
- **Automotive:** Gaskets, rings, valves and hoses in the fuel system; wiring and circuit boards; pull cables; shock absorbers and bushings; electric vehicle batteries
- **Aerospace (military and civilian):** High performance navigation and communication antennae; lubricants for wing flap mechanisms and landing gear; fuel-oxygen separation systems
- **Electronics:** Ultra-low contamination semiconductor manufacturing; wafer etching; chemical piping and storage
- **Chemical/Industrial Processes:** Linings for pipes, valves and tanks to prevent corrosion; gaskets in high temperature, high pressure production processes to contain reactive substances
- **Medical/First Responder:** Surgically implanted medical devices (e.g. stents); COVID testing equipment and respirator tubing; catheters and guide wires



Fluorotelomers

Another major type of PFAS in use today is C6 fluorotelomers, which are well-studied and meet relevant regulatory standards for the protection of human health and the environment. C6 fluorotelomer-based products are versatile chemistries with wetting and spreading features, as well as unique properties that repel water, oil and stains. These unique characteristics make fluorotelomers a critical component of many important medical and first responder applications. Key examples of C6 fluorotelomer products include:

- Woven medical textiles
- Pulp-based repellent medical equipment
- High-performance air and liquid filtration and separation media
- Nonwoven membranes for water filtration
- Paper-based grease repellent food packaging/wrapping
- Outdoor technical textile applications
- Semiconductor production
- Adhesives, sealants and caulks
- Paints and coatings
- Class B fluorinated firefighting foams



High-Performance Fluorotechnology/PFAS Delivers Many Important Societal Benefits

Multiple industries depend on high-performance FluoroTechnology/PFAS, including aerospace, alternative energy, automotive, building and construction, chemicals, pharmaceuticals, electronics, healthcare, oil and gas, outdoor apparel and equipment and semiconductors, just to name a few.

FluoroTechnology is used in a wide array of products and plays a vital role in everything from designing automobiles with lower emissions and improved safety, reliability and fuel-efficiency to manufacturing semiconductors, solar panels and high performance electronics.

FluoroTechnology provides a unique combination of properties that often cannot be replicated with non-fluorinated alternatives.

