

The Societal Value of Fluoropolymers

Take a look around you. Right now, wherever you are. What do you see?

Maybe you are working from home and you have a computer, a mobile phone, or a television nearby. Maybe you are out taking a walk and there are cars parked along the streets and neighbour is having solar panels installed on their roof. Or maybe you look up at the ceiling and notice that a lightbulb had gone out and needs to be replaced.

What you most likely see around you are everyday sights and objects, but did you know that many of them are developed and built using fluoropolymers?

The scientific definition of a fluoropolymer is a fluorocarbon-based polymer with multiple carbon-fluorine bonds. To the non-scientist, that translates to a very strong plastic resin made up of carbon and fluorine bonds. This bond between carbon and fluorine is so steadfast that fluoropolymers have become a critical material in a wide range of every day and extraordinary applications.

While we may not often stop to think how ubiquitous fluoropolymers are, it is worth understanding the degree to which they enable us to live more sustainable and digitalised lives, saving us energy, costs, and effort.

Here are some examples of just a few of the many benefits that fluoropolymers add to our society¹:

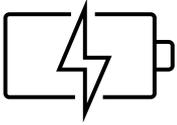


Architecture: Fluoropolymers provide durable, fire-proof, easy-to-clean, building materials which can both reduce a building's cooling costs and energy use, whilst enabling novel and innovative "landmark" architectural designs not feasible with other materials. A great example is Wimbledon centre court's retractable roof.

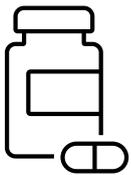


Electronics: Fluoropolymers are critical in enabling semiconductor manufacturing, which in turn enables the production of smartphones, computers, refrigerators, LED bulbs, and even trains. The EU semiconductor market is worth more than €25 billion and over €50 million worth of fluoropolymers has gone into this.

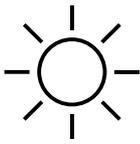
¹ Numbers according to 2015 data. More information available at:
https://fluoropolymers.plasticseurope.org/application/files/7816/1167/4026/Final_SEA_Fluoropolymers_summary2017_3.pdf



Batteries: Fluoropolymers are an essential component of fuel cells and batteries, in particular lithium-ion and vanadium redox flow batteries. Not only do they improve the performance and energy output of fuel cells in lithium-ion batteries, they can also be used as cathode or anode binders or for separator coatings and prolong the lifetime of batteries.



Medicine: Fluoropolymers are used in a range of medical devices, a market in which Europe is leading. Fluoropolymers enable excellent performance and long lifetime in medical equipment such as surgically implantable medical devices, catheters, guide wires, filters and pumps. This reduces the need for replacements, risk of failure, cross-infections and clogging of medical equipment, thereby contributing to the reduction and avoidance of medical complications, the associated pain and public cost.



Renewable Energy: Fluoropolymers are critical elements of EU Green Deal oriented technologies. For example, they help to increase efficiency in solar panels, increasing production efficiency to the tune of €40 - €90 million each year across the EU. Fluoropolymers also improve wind energy capture, coating the turbines to ensure they can withstand rain, hail and environmental contaminants.



Transport: Fluoropolymers, in addition to their semiconductor usages, also help to enable fuel savings, e.g. by coating fuel hoses, which reduces damage from emissions and saves over €140 million every year in the EU. In 2015, 18,500 tonnes of fluoropolymers were used in the transport sector.



Automotive: Fluoropolymers are used in critical components that protect passengers and ensure the safe running of combustion engines. Fluoropolymers are also increasingly used in electric vehicles, helping to decarbonise transport.



Aviation: Fluoropolymers are used in the aviation industry to make planes lighter and more insulated, protecting passengers and decarbonising the industry.

These examples show how fluoropolymers are already playing an important role in Europe's green and increasingly connected future. As an industry, we are committed to promoting innovation, safe use, sustainable manufacturing and stewardship across the industry for all our products. Let's work together to create a greener, safer future for the EU.