



FLUOROTECHNOLOGY: HELPING CREATE SUSTAINABLE, HIGH PERFORMANCE OUTDOOR APPAREL

FluoroTechnology Products Offer High Performance Benefits for Apparel

Fluoro-technology products offer unique, highly beneficial performance properties to the apparel industry, such as long-lasting water repellency, oil repellency, stain resistance, and soil release with abrasion resistant finishes. This full range of performance effects cannot be achieved with alternative technologies at this time. Garments treated with fluoro-technology have a longer useful life, reducing energy and water use for replacements and requiring less frequent laundering, lower wash temperature and shorter drying time, which all further help to reduce water and energy consumption. Outdoor performance apparel and equipment enhanced with fluoro-technology help people stay warm, dry, and safe in extreme conditions.

Fluoro-technology refers to the field of science that uses fluorine chemistry to create products with unique properties that are essential to modern life and industry. Products of fluoro-technology include fluoropolymers and fluorotelomer-based polymers and performance products.

The new generation of C6 short-chain products currently manufactured by the FluoroCouncil member companies delivers the same advantages as historical long-chain products. While non-fluorinated products are available for some traditional uses of long-chain perfluorinated chemicals (PFCs), they generally do not meet the performance needs of apparel because they do not provide the full range of high-performance benefits, such as oil and soil repellency and durability. For garment performance, the most effective alternatives are the new short-chain products.

According to U.S. EPA, "PFAC chemicals with fewer than eight carbons, such as perfluorohexanoic acid (PFHxA), are not considered long-chain PFAC chemicals. These shorter-chain PFAC chemicals are not part of [the U.S. EPA Long-Chain Perfluorinated Chemicals Action Plan] because data in non-human primates indicate that they have substantially shorter half-lives in these animals than PFOA and are less toxic than long-chain PFAC chemicals."*

Shared Commitment to Sustainability

Leaders in the apparel industry are spearheading efforts to reduce the environmental footprint of their products, demonstrating a strong commitment to a sustainable future and producing results. The FluoroCouncil commends this leadership. The FluoroCouncil is the global industry group representing fluorine-based chemistry and technologies. Our members, as suppliers to the apparel industry, support efforts to phase out long-chain PFCs (also known as "C8" chemistries). The FluoroCouncil members have made sustainability and stewardship a priority and are working with regulatory authorities worldwide to phase out long-chain PFCs and offer safe and effective short-chain alternatives.

* See U.S. EPA website at <http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/pfcs.html>



FluoroCouncil Members are Taking Action on Sustainability

The FluoroCouncil is devoted to assuring that the industries' products keep pace with emerging understandings of safety and sustainability. Fluoro-technology products have a long history of delivering superior performance for a wide diversity of challenging applications. The FluoroCouncil is committed to continuing to support current and new applications while addressing the specific environmental concerns that have been raised regarding long-chain PFCs. All of the FluoroCouncil members were early adopters of the 2010/2015 PFOA Stewardship Program, a global partnership between the U.S. Environmental Protection Agency (U.S. EPA) and industry. Four of the FluoroCouncil members also signed on to an Environmental Performance Agreement with Environment Canada and Health Canada, which is similar to the U.S. EPA Stewardship Program. The FluoroCouncil members have put significant resources into the development of alternative short-chain products.

New, More Sustainable Chemistries Have Been Rigorously Tested

FluoroCouncil members are currently focused on supporting the global transition to alternative chemistries, including a new generation of short-chain, fluorotelomer-based "C6" products. These short-chain products continue to provide the excellent benefits of fluoro-technology, such as durable stain-resistance and water-resistance, with improved environmental and biological profiles in comparison to their predecessors. The FluoroCouncil and its members are driving efforts to move the marketplace to fully adopt this new generation of products.

Recognizing concerns that have been raised regarding long-chain PFCs, regulatory authorities have increased their scrutiny during assessment of proposed alternatives. The C6 short-chain products currently on the market designed to replace long-chain PFCs have been rigorously evaluated by industry and assessed by regulators. FluoroCouncil members have worked with U.S. EPA in its review of alternatives to long-chain PFCs, providing data on their safe and effective use. To date, EPA has reviewed over 150 alternatives. FluoroCouncil members are continually developing additional data on the toxicological and biological profiles for short-chain products to further demonstrate they are safe for their intended uses.

C6 short-chain products and certain degradation products have been evaluated in a considerable number of environmental and toxicity studies. It is important to note that short-chain products cannot degrade to long-chain substances such as PFOA, PFOS or PFHxS. A significant volume of data supports the conclusion that C6 short-chain substances such as perfluorohexanoic acid are rapidly eliminated from the body and not expected to be harmful to human health or the environment. This supports the sustainability goals of the apparel industry and regulators because it addresses major concerns, such as long elimination half-life, about the long-chain PFCs used in the past.

THE FLUOROCOUNCIL MEMBERS ARE:

Archroma Management LLC, Arkema France, Asahi Glass Co., Ltd., Daikin Industries, Ltd., DuPont Company, and Solvay Specialty Polymers.

For more information about the FluoroCouncil, please contact Jessica Steinhilber at +1 (202) 249-6737 or Jessica_Steinhilber@fluorocouncil.com.





About the FluoroCouncil

Product Stewardship and Sustainability

The FluoroCouncil is a global membership organization made up of the world's leading manufacturers of fluoro-technology products. We are committed to being a partner in the international dialogue about corporate responsibility and sustainability and are fundamentally committed to product stewardship. As part of that commitment, we participate in key international venues focused on sound chemicals management. We also view stakeholder engagement as central to achieving our mission.



Our Focus

The FluoroCouncil is focused on:

- Facilitating the successful global transition from long chain perfluorinated chemicals to alternative chemistries, such as C6/short chain fluoroproducts with improved environmental and biological profiles.
- Working toward appropriate regulatory outcomes for historical products.
- Advocating for responsible product stewardship.

Benefits of FluoroTechnology

The products of fluoro-technology include fluoropolymers, such as polytetrafluoroethylene and polyvinylidene fluoride, surface property modification agents, including those used to provide water and soil resistance to textiles and carpets, as well as other surfactants such as paint and ink additives. Because of their unique combination of performance capabilities, fluoro-products are used in a wide range of industries.

Fluoro-products play a vital role in:

- Designing cars with lower emissions and better safety, reliability and fuel-efficiency.
- Manufacturing semiconductors, solar panels and high performance electronics.
- Designing safer buildings and making protective firefighter wear.

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