

PRODUCT BULLETIN

Colorant Chromatics™ Cross-linkable Formulations

Developed to improve the mechanical and physical properties of Ethylene Tetrafluoroethylene (ETFE) and Polyvinylidene Fluoride (PVDF) resins.

Fluoropolymers excel with exceptional dielectric properties and continuous service temperatures, making them suitable for demanding environments such as wire and cable applications. These solutions can withstand high-heat, corrosive environments, and extreme cold temperatures, offering reliable performance in a wide range of conditions.

Within the full spectrum of fluoropolymers, ETFE—especially in its radiation crosslinked form (X-ETFE)—offers unique advantages for aerospace applications that demand lightweight materials and reduced thickness without compromising excellent high-temperature resistance. This combination makes X-ETFE a strong choice when both performance and weight savings are essential.

Avient's range of Colorant Chromatics™ cross-linkable formulations, produced with X-ETFE and X-PVDF, deliver superior cut-through resistance and reliable durability in demanding environments. These materials offer enhanced protection against abrasion and wear for ETFE, combining strength with longevity. Through a carefully engineered blend of additives, high-temperature fluoropolymers such as ETFE can be cross-linked using electron beam radiation, unlocking improved performance for challenging applications.

Avient's cross-linkable formulations are available in both small and large quantities, as off-the-shelf or custom-tailored solutions. They offer multi-functional performance in a single product.

These solutions come ready to use and can be provided in pre-colored, or custom-colored options for both ETFE and PVDF resins.

KEY CHARACTERISTICS

- **High temperature resistance:** for long-term use at up to 200 °C for X-ETFE
- **Chemical resistance:** withstands harsh environments
- **Radiation resistance:** suitable for space applications
- **Flame retardant:** can be compliant with stringent defense standards, including MIL-W-22759
- **Improved mechanical properties:** improved toughness and abrasion resistance

BENEFITS OF X-ETFE

- **High and low-temperature applications:** suitable for environments with extreme temperature variations
- **Lightweighting:** allows for weight reduction, making parts lighter
- **Extended lifetime:** enhanced mechanical properties, such as abrasion resistance, lead to a longer service life
- **Melt-processible alternative:** provides a viable alternative to traditional polytetrafluoroethylene (PTFE) solutions, making the manufacturing process easier
- **Demanding industries:** suitable for use in sectors with stringent requirements, such as aerospace, automotive, and defense

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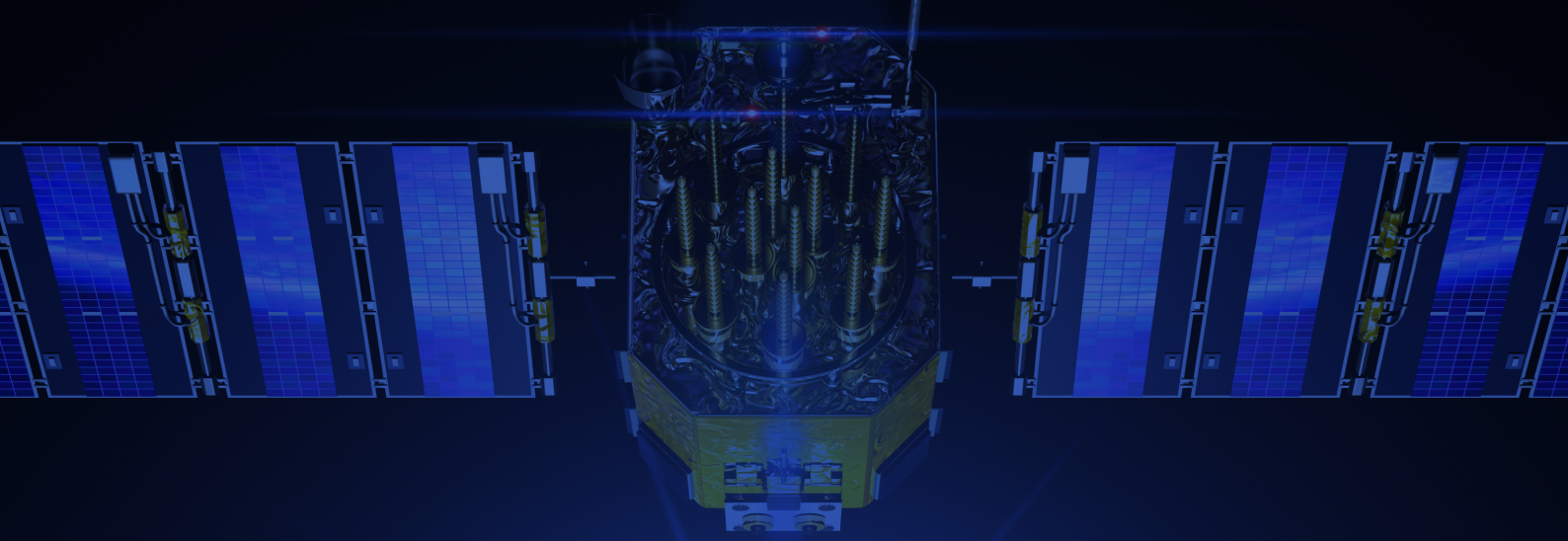

CURRENTLY AVAILABLE X-ETFE SOLUTIONS

- Fully formulated functional compound solutions, ready for use
- Colored solutions, including white and specific aeronautics colors: green, red, blue, violet, gray, yellow, and more
- Flexible X-ETFE, developed to pass bending tests
- Low-fluoride outgassing X-ETFE available to prevent corrosion and extend lifespan
- High-quality standards for all applications
- Thinner cables possible without sacrificing manufacturing speed or quality

TYPICAL APPLICATIONS

- Aircraft wiring
- Satellite applications
- Aerospace
- Defense

TYPICAL AEROSPACE STANDARDS THAT CAN BE FULFILLED BY AVIENT'S X-ETFE SOLUTIONS

- MIL-W-22759
- NASA-SPR-0022
- Boeing BMS13–48
- Airbus ABS 0820-0826
- GJB773B-2015

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