PERFORMANCE FLUOROPOLYMER PARTNERSHIP

FLUOROPOLYMERS HELP THE AEROSPACE INDUSTRY THRIVE

Critical for performance in the aerospace industry, fluoropolymers provide protection against heat, cold, smoke, aggressive fluids and fuels, humidity, vibrations, and compression while also improving safety and reliability and enabling sophisticated antenna and communications systems.

Fluoropolymers' unique properties are used in aerospace (and automotive) electronics systems to provide heat resistance and increase durability. Fluoropolymer coatings and components help improve engine efficiency, make travel safer and more affordable, and reduce environmental impact.

Fluoropolymer fuel tubes and hoses drastically reduce fugitive emissions, while fluoropolymer release films are used to produce carbon fiber-reinforced structural components.

This fact sheet describes the unique characteristics of fluoropolymers and their extensive use in the aerospace industry.

Fluoropolymers' Unique Characteristics

- Fluoropolymers have thermal, chemical, photochemical, hydrolytic, oxidative, and biological stability.
- Fluoropolymers are practically insoluble in water and not subject to long-range transport.
- With a molecular weight well over 100,000 Daltons, fluoropolymers cannot cross the cell membrane.
- Fluoropolymers are neither bioavailable nor bioaccumulative.
- Fluoropolymers meet criteria used to identify polymers of low concern to human health and the environment.

Please visit **fluoropolymerpartnership.com** for more information.

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Fluoropolymer Uses in Aerospace

LUBRICANTS AND GREASES

- Rated compatible with fuels and oxidizers
- Used for aircraft, aerospace vehicles, and supporting equipment
- Helps to meet exacting performance requirements in military specifications

SEALS

- Used in engine fuel systems to help protect against combustion in high temperature and pressure operating conditions

WIRE AND CABLE

- Insulation for cables and wires to maintain high signal quality in harsh operating conditions
- Improve in-flight connectivity on wireless networks and reduce the number of antennae required

BEARINGS

- Reduce friction resistance in rotating parts of engines and wheels
- Durability enhances safety and reduces maintenance downtime for critical parts

EXTERIOR AND INTERIOR

- Sealing and surface protection against aviation liquids and UV radiation
- Anti-fouling properties for tubes, hoses, and filters in onboard water and air systems
- Enable precision molding of exterior panels to reduce weight and improve fuel efficiency

Fluoropolymer Benefits in Aerospace

- Better fuel economy by reducing vehicle weight
- Lower exhaust emissions, including both carbon and NO_x gasses
- Increased lifetime of components
- Improved reliability and lower maintenance costs
- Enables use of alternative fuels and power storage batteries
- Helps avoid oil and fluid leakage

No Alternatives Offer the Same Combination of Properties

Enhanced:

Non-Wetting Properties
Heat Resistance
Non-Sticking Properties
Weather Resistance
High-Performance Dielectric Properties
Chemical Resistance

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