



Aerospace Fact Sheet

What are fluoropolymers?

- Fluoropolymers are a specialty plastic that possess a unique combination of properties that make them critical to modern life and a wide variety of sectors and industries.
- Fluoropolymers are one specific class of per- and polyfluoroalkyl substances (PFAS), a group of thousands of chemical compounds with varying characteristics, properties, and environmental and safety profiles.
- Importantly, fluoropolymers do not pose a significant risk to human health or the environment when used for their intended purposes.

Fluoropolymers are critical technologies with no viable alternatives.

- Fluoropolymers' unique combination of properties makes them fundamental to the products they enable.
- No alternatives offer the same combination of properties, including:
 - Fire resistance
 - Weather resistance
 - Temperature resistance
 - Chemical resistance
 - Non-wetting properties
 - Non-sticking properties
 - High-performance dielectric properties

Background Points

Uses of Fluoropolymers in the Aerospace Industry

Fluoropolymers play a significant role in the aerospace industry. Applications of fluoropolymers include the below:

- **Cable and wire insulation:** Fluoropolymers are used as insulation in cables and wires to improve signal quality for critical data transmission and increased durability.
- **Leaky feeder antennas:** Fluoropolymers are used to improve in-flight connectivity on wireless networks by ensuring low smoke generation, providing flame resistance and durability, and reducing the number of antennas required.
- **Aircraft interior coating:** Fluoropolymers are used for their flame retardancy, non-fouling, and ease of cleaning for aircraft interiors.

- **Aerospace materials, tapes, and gaskets:** Fluoropolymers are used to provide sealing and surface protection against aviation liquids and UV radiation.
- **Electronic systems:** Fluoropolymers are used to increase durability, provide heat and fire resistance, lower dielectric constants, and increase the reliability of wires, optical, and data transmission cables.

Benefits of Fluoropolymers in the Aerospace Industry

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