Fluoropolymers

Product Group of Plastics Europe

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The Fluoropolymers Products Group Releases Comprehensive Guide on Safe Handling of Fluoropolymer Resins as part of its Manufacturing Programme

The members of the Fluoropolymer Product Group (FPG) are pleased to announce the release of their updated guide for the safe handling, processing and waste management of fluoropolymer resins, aiming at equipping the industry and its downstream users with robust safety information and best practices in emission control.

The *Guide for the Safe Handling of Fluoropolymer Resins* is an essential pillar of FPG's Manufacturing Programme; a voluntary, industry-led initiative, launched in September 2023. The Programme sets a new benchmark for emissions control in fluoropolymer production across European manufacturing sites to ensure the safe and continued use of these critical, advanced materials.

Overview of the Manufacturing Programme

At the end of 2024, FPG's members completed the first milestone in their Manufacturing Programme by successfully meeting their emissions reduction targets for non-polymeric PFAS. The Programme comprises three pillars, more specifically:

1. An industry-led commitment to achieve average emissions factors for non-polymeric PFAS residues from polymerisation aid technology that is used in the fluoropolymer manufacturing process:
    1. By end 2024: 0.009% to air; 0.001% to water.
    2. By end 2030: 0.003% to air; 0.0006% to water.

2. A commitment to inform downstream users of fluoropolymers on their safe handling and use in the *Guide for the Safe Handling of Fluoropolymer Resins*.

3. A platform to exchange information on commercially available state-of-the-art technologies to minimise non-polymeric PFAS emissions in manufacturing.

The Safe Handling Guide

Through the Safe Handling Guide, FPG's members have delivered on their commitment to equip industry and its downstream users with robust safety information and best practices.

This comprehensive guide, the first of two, covers essential materials such as PTFE, ETFE, FEP, PFA, PVDF, and ECTFE, which are widely used in various industries, including aerospace, transport, chemical processing, energy, medical devices, and technical clothing. It reflects current knowledge and best practices for handling fluoropolymer resins safely, minimising health risks and environmental impacts, and ensuring compliance with regulations across Europe and associated regions.

Fluoropolymers are renowned for their durability, safety, chemical inertness, and mechanical strength, making them indispensable in numerous applications. Any potential risks are covered in the manual with the corresponding safety measures.

Providing detailed recommendations for precautionary safe handling and risk mitigation, the guide provides in-depth information on the different types of fluoropolymer resins, including their thermal properties and specific handling requirements. It also includes an extensive table summarising typical melting points, service temperatures, and processing temperatures for each polymer type.

Exemption of Fluoropolymers from REACH Restriction

FPG and its members are committed to the safe use and sustainable manufacturing of fluoropolymers, as well as to responsible end-of-life solutions.

Fluoropolymers are currently indispensable in critical applications - from semiconductors and green hydrogen to medical devices and renewable energy - enabling Europe's digital and ecological transitions and reinforcing its strategic autonomy. The Commission has already indicated support for exemptions from the REACH Restriction, where substances are essential to these goals. In most such cases, the materials in question are fluoropolymers.

Fluoropolymers are biologically and chemically stable, insoluble, non-toxic, non-bioavailable, non-accumulative, and resistant to extreme temperatures and chemical interactions. They differ fundamentally from other PFAS and do not pose an "unacceptable risk" to the environment and human health (REACH, Article 68).

FPG supports enhanced regulation under existing legislation, such as the Industrial Emissions Directive (IED), and calls for a clear, proportionate framework of conditions and controls for critical uses.

FPG's Safe Handling Guide, as part of the broader Manufacturing Programme, justifies exempting fluoropolymers from the REACH restriction, underpinned by clear, enforceable conditions that ensure environmental protection. By fostering balanced and evidence-based regulation, we can ensure that essential technologies supported by fluoropolymers continue to deliver solutions that benefit society and the environment alike.

"This comprehensive guide underscores our commitment to setting high standards for emissions control and ensuring the safe handling, processing, and waste management of these essential materials, critical for European industries. Together with FPG's Manufacturing Programme and other initiatives, our industry is paving the way for a sustainable future," said Ronald Bock, FPG Chairman.

Read more on FPG's Manufacturing Programme here: FPG Statement on the Manufacturing Programme 2025 - Plastics Europe

FPG's Safe Handling Guide is available, for free and via request, by writing to caroline.andersson@plasticseurope.org

FPG's Statement on ECHA's PFAS Background Document and response to the European Commission's Chemical Industry Action Plan (CIAP): www.fluoropolymers.eu

More detailed information on the Manufacturing Programme, including the first part of the Safe Handling Guide and other FPG initiatives, will be discussed during FPG's upcoming webinars. More information on these can also be found on FPG's website.

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About Fluoropolymers Product Group (FPG):
The FPG is part of Plastics Europe, the industry association representing European polymer producers. It operates in accordance with the Plastics Europe governance rules, including Competition Compliance Rules. Plastics Europe covers the EU, plus UK, Norway, Turkey and Switzerland.

About Fluoropolymers:
Fluoropolymers are advanced materials that provide unmatched durability, chemical and thermal resistance, and stability in extreme environments. Their unique set of properties makes them essential in many industries, from healthcare and renewable energy to transportation, aerospace and semiconductors.