Fluoropolymers

Product Group of Plastics Europe

Brussels, 6 May 2025

Fluoropolymer Product Group (FPG)
Manufacturing Programme for European Manufacturing Sites

What is the FPG Manufacturing Programme?

The FPG Manufacturing Programme is a voluntary initiative adopted in September 2023. The Programme sets a new benchmark in fluoropolymer manufacturing emission control in Europe and aims to lead the way for other manufacturing sites worldwide.

Why was the Programme Created?

The Programme's goal is to ensure that fluoropolymers are produced responsibly. This is achieved with the lowest possible emissions using state-of-the-art commercially available technologies. The Programme addresses legitimate questions and concerns about emissions generated during manufacturing.

Who is Participating?

FPG member companies with manufacturing plants in Europe are part of the Programme. The participating companies listed are: AGC Chemicals Europe, Ltd., Arkema, Chemours Netherlands B.V., Daikin Chemical Europe, Syensqo, and W. L. Gore & Associates.

The Programme's Three Pillars

The Programme comprises three main parts:

1. An industry-led voluntary commitment to reduce non-polymeric PFAS emissions during fluoropolymer manufacturing.

2. A platform to promote the adoption of commercially available state-of-the-art technologies to minimise non-polymeric PFAS emissions in manufacturing, while protecting confidential business information and IP rights.

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

Focus on Polymerisation Aid Technology

The Programme specifically targets non-polymeric PFAS residues from polymerisation aid technology because of commonality between member sites and the use of this technology has emerged as one of the key concerns of regulators in recent years. While complying with their operating permits, individual companies are also working to improve understanding and reduce emissions in other areas not covered by this specific programme.

Emission Reduction Targets

Members are committed to achieving specific average emission factors for non-polymeric PFAS residues from polymerisation aid technology. The targets are:

- By end 2024: 0.009% to air and 0.001% to water.
- By end 2030: 0.003% to air and 0.0006% to water.

Calculating Emission Factors

The emission factors are calculated using a specific formula:

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$$EF_{comp} = E_{comp} / m \times 100,$$

Where:

EF	emission factor of the produced/ processed PFASs	[%]
comp	receiving environmental compartment i.e.: water or air	[-]
E	Tonnes of PFASs emitted per year	[t/y]
m	Tonnes of PFASs produced/ processed per year	[t/y]

Reference: Annex B to the Restriction Proposal (page 227)

For instance, if 1000 kg of a fluoropolymer is produced annually:

- By the end of 2024, emissions to air must be 0.09 kg/y or less, and emissions to water must be 0.01 kg/y or less.
- By the end of 2030, emissions to air must be 0.03 kg/y or less, and emissions to water must be 0.006 kg/y or less.

The Way Forward

Participants will continue to implement and improve state-of-the-art technologies to further reduce emissions and work towards achieving the 2030 targets. Efforts to identify and promote state-of-the-art emission control technology will continue via the Manufacturing Programme Technologies' Exchange Platform. An updated Guide for the Safe Handling of Fluoropolymers will be published later in 2025. Members will also individually investigate and develop R&D programmes focused on substituting PFAS-based polymerisation aids, where proven technically feasible, environmentally sound, meeting the performance and processing requirements and viable at an industrial and commercial scale.

An update will be published in 2026, setting out the progress made in 2025 across all the different pillars of the Manufacturing Programme as we strive towards our 2030 commitment.

In Conclusion

Through this industry-led voluntary initiative, European manufacturers are taking concrete steps to set best-in-class fluoropolymer manufacturing practices. We are committed to transparent engagement with regulators to demonstrate industry efforts of responsible manufacturing practices and are willing to engage further in developing workable regulatory solutions for fluoropolymers.

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Contact:
Caroline Andersson, Director Fluoropolymers Product Group:
caroline.andersson@plasticseurope.org
Tel: +32 2 7923 53, Mobile: +32 477 639165

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.

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