PLASTICS EUROPE
Enabling a sustainable future
Fluoropolymers Product Group

FPG Manufacturing Programme for European Manufacturing sites

Since the 2021 adoption of the manufacturing principles, all Fluoropolymer Products Group (FPG) members are engaged in concrete actions related to fluoropolymer manufacturing practices.

The undersigned members of the Fluoropolymer Products Group (FPG) hereby commit to an industry Manufacturing Programme for European Manufacturing sites. The programme is comprised of three pillars:

1. A voluntary commitment to reduce non-polymeric PFAS emissions from our fluoropolymer manufacturing;

2. A platform to promote the adoption of commercially available state of the art technologies to minimise non-polymeric PFAS emissions in our manufacturing; and

3. A commitment to inform downstream users of fluoropolymers on their safe handling and use.

1. Voluntary commitment on non-polymeric PFAS emissions reduction

The voluntary commitment focuses on the emission reduction of non-polymeric PFAS chemicals from European fluoropolymer manufacturing.

The undersigned PE-FPG members commit for their European Fluoropolymer manufacturing sites to:

- Achieve the following Average Emission Factors of non-polymeric PFAS residues from polymerisation aid technology that is used in the fluoropolymer manufacturing process:

  - By end 2024: 0.009% to air; 0.001% to water

  - By end 2030: 0.003% to air; 0.0006% to water

  Average Emission Factors are calculated as follows (in percentage): Annual emission of non-polymeric PFAS residue from non-polymeric polymerization aid technology [added or generated]//total annual amount of fluoropolymers produced on site.[1]

  The achievement of these Average Emission Factors is independent of whether fluorinated, non-fluorinated or no polymerization aids[2] are being used in the production of fluoropolymers, at each of our sites.

[1] Method of calculation of emission factor based on the Equation 1. Calculation of emission factors from Annex B of PFAS restriction proposal p. 227 (Submitted restrictions under consideration - ECHA (europa.eu))
[2] Polymerisation aid is as defined in ECHA's PFAS restriction proposal Annex A "Polymerisation aid is the term used to describe a surfactant or emulsifier, fluorinated or non-fluorinated"

- To continue investigating and developing R&D programs for the advancement of technologies allowing for the substitution of PFAS-based polymerization aids during fluoropolymer production, and where proven technically feasible, environmentally sound, meeting the performance and processing requirements and viable at an industrial and commercial scale, to substitute the use of PFAS-based polymerization aids.

- Recognising the unique characteristics of each manufacturing site, the signatories of this document also commit to individually cooperate with their National Competent Authorities regarding **non-polymeric PFAS emissions to air and water** from their European fluoropolymer manufacturing sites by the end of 2024.

- Continuously improve understanding of non-polymeric PFAS emissions to air and water, that are not captured or destroyed, by use of targeted and non-targeted analytical techniques.

2. State of the art technologies platform

In addition, we will launch a platform to promote the adoption of commercially available state of the art technologies in the following areas of our manufacturing:

- Continuous improvement of risk management measures to further improve industrial hygiene controls for chemicals used in the fluoropolymer manufacturing process.
- Management Techniques (e.g. management systems).
- Techniques to minimise non-polymeric PFAS emissions to air, including quantification and management of fugitive emissions (e.g. emissions control of exhaust air, leaks from connections, …).
- Monitoring emissions to air.
- Techniques to minimise non-polymeric PFAS emissions to water, including quantification and management of fugitive emissions.
- Monitoring emissions to water.
- Techniques to reduce, capture and re-use unconsumed raw materials and waste
- Monitoring raw material consumption and waste generation.
- Monitoring and quantifying the reduction, capture and re-use of unconsumed raw material and waste.

Reflecting the evolution in commercially available state of the art technologies in emissions control, the platform will work on an ongoing basis.

It is up to each company to implement the technologies that it considers appropriate notably in light of the specificities and usages of their manufacturing process.

3. Downstream users

We also commit to helping inform downstream users of fluoropolymers on their safe handling and use by providing additional information on safe fluoropolymer processing and prevention of environmental release in the Guide for the Safe Handling of Fluoropolymer Resins.

Implementation

No later than the 31 December 2023, the members will approve a programme framework agreement to start the protected sharing of information among companies.

To report and monitor the implementation of the programme work, the programme participants shall institute an exchange forum with key stakeholders and legislators. This exchange forum guarantees transparency, accountability and supervises the implementation of the FPG Responsible Manufacturing Programme. The exchange forum shall meet formally twice per year with a first meeting by September 2024.

To ensure compliance with competition law, each member of the programme shall remain independent in the way in which they implement the voluntary commitment and state-of-the-art technologies in their own manufacturing process. The information gathered from its members will be aggregated and anonymized in respect of competition law.

Signatories

AGC Chemicals Europe, Ltd.	Arkema
Chemours Netherlands B.V	Daikin Chemical Europe GmbH
W. L. Gore & Associates Inc	Solvay