

FPP4EU compilation of a non-exhaustive list of missed and or partially covered uses



11 December 2023

The European Chemical Industry Council, AISBL – Rue Belliard, 40 - 1040 Brussels – Belgium
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Compilation of a non exhaustive list missed and/or partially covered PFAS uses

Table A.1. Overview of PFAS applications and the level at which they were researched.

PFAS applications			
PFAS manufacture	Textile, upholstery, leather, apparel and carpets (TULAC)	Food contact materials and packaging	Metal plating and manufacture of metal products
Consumer mixtures	Cosmetics	Ski wax	Applications of fluorinated gases
Medical devices	Transport	Electronics and semiconductors	Energy sector
Construction products	Lubricants	Petroleum and mining	Waste stage PFAS applications
Laboratory equipment & filtration	Plant protection products and biocides	Chemical industry	Firefighting foam
Medicinal products	Plastics (other than packaging) and rubber/elastomer production (including flame retardants)	Pyrotechnics	Personal care products other than cosmetics
Fracking (currently hardly applicable in EEA)	Immersion cooling (currently hardly applicable in EEA)	Defence industry	Printing inks
Cement industry	Professional cleaning and polishing	Other niche applications	Uses (yet) unknown

- Green uses are researched in detail
- Blue uses are researched in general
- Orange uses not researched in detail
- Purple use: Separate restriction proposal



Listing of uses - 14 sectors based on:

- Restriction proposal
- Annex A

Some uses are detailed, others are rather generic.

Excel file on PFAS uses: all uses

Carpets and rugs	
Curtains and blinds	
Textile based coverings (e.g., fabrics for soft-furnishings, tablecloths, bedding)	
Indoor and outdoor wear	
Sportswear	
Footwear	
Accessories (e.g., umbrellas, bags, wallets)	
Professional sportswear and footwear	
PPE for industrial and professional use (other than sportswear)	
Outdoor technical textiles (e.g., canvas, awnings, tarps, tents, sails, rope)	
Medical applications (e.g., surgical drapes, gowns, curtains)	
High performance membranes (e.g., automotive and medical)	
Leather based goods (e.g., leather bags, wallets, belts)	
Indoor and outdoor wear	
Footwear	
Professional sportswear and footwear	
Home fabric treatments (sprays) for leather/textiles	
Safety helmets	
Gloves	
Eye protection	
Hazmat suits	
High-visibility clothing	
Safety footwear	
Safety harnesses	
Ear plugs	
Ear defenders	
Respiratory protective equipment	
High performance upholstery	
Outdoor textiles	
Chemical protective suits	
Protective and technical textiles where PTFE is used as a membrane material	
Medical gowns, drapes and PPE	
Within some face masks	
Leather straps	
Architectural polyester as fluoropolymers	
Construction products	
Lubricants	
Energy sector	
Petroleum and mining	
Active substances in PPP, BP & MP	
All uses	

We merged all the uses in
one sheet:
600 uses listed.



Compilation of a non exhaustive list missed and/or partially covered PFAS uses

- 59 Members and Observers of the Collaboration Platform submitted data (both companies and associations).
- Answers were anonymised and randomised but not filtered.
- Only a sample, not a complete survey.
- Sectors represented:

- Chemicals
- Pharmaceuticals
- Electronics
- Automotive
- Energy
- Home appliances
- Consumer products
- Oil & gas
- Batteries
- Engineering
- Manufacturing
- Textiles
- Paints & coatings
- Digital
- Safety



Results

FPP4EU Compilation of missed PFAS uses (non-exhaustive list!)			
This document contains non-exhaustive lists of PFAS missed uses and uses partially covered in the restriction proposal submitted by the competent authorities in January 2023. These lists have been established by collecting data from PFAS-producers and downstream users. For compliance reason, FPP4EU is publishing all the data received in an anonymized way. No representations or warranties are made with regards to the accuracy or completeness of their contents, and no liability will be accepted by FPP4EU for damages of any nature whatsoever resulting from the interpretation, use or reliance on these lists.			
Sector of Use (please scroll down)	Describe Sector of Use (if you have chosen "other")	PFAS missed uses (description of uses/application)	Comments
Other	Chemical, power, petrochemical refining, food and pharma	Creates a seal preventing liquids or gases escaping to atmosphere.	Chemically inert and resistant (especially concentrated acids and alkalines), Food & Drug approved. Applications with low available bolt load.
Other	Automotive, industrial	Seal hydrogen in high pressure application	Ductility, chemical resistance
Electronics and semiconductors	Mechanical applications	Moving parts, machinery, printers, Bearings, gear boxes, compressors etc	Low coefficient of friction, repellency properties
Transport		Guides and sliding parts for guiding the rubber throughout the production line of tyres	
Chemical industry		PTFE sealings	Safe handling of aggressive chemicals, high temperatures,...
Other	Machinery and equipment manufacturing industry	bearings/sliding bushes (PTFE) in air&process gas compressors	Machinery and equipment manufacturing industry covers: Construction and building machinery; Fluid power; Conveyor technology and intralogistics; Air technology; Agricultural technology; Medical technology; Mining; Food processing and packaging machinery; Power Systems (electricity and heat generation); Process engineering machinery and equipment; Laundry Technology
Other	Machinery and equipment manufacturing industry	Separation technologies and filter media (PVDF, PTFE, FEP, ECTFE, PFHxA) e.g. used in compressed air or process gas filtration	Machinery and equipment manufacturing industry covers: Construction and building machinery; Fluid power; Conveyor technology and intralogistics; Air technology; Agricultural technology; Medical technology; Mining; Food processing and packaging machinery; Power Systems (electricity and heat generation); Process engineering machinery and equipment; Laundry Technology
Energy sector		Filters for gas turbines	
Other	Cleaning - rinsing removal	HFEs and HFOs in cleaning are used for their low surface tension, their compatibility with a large number of materials, their low boiling point associated to their inerting properties. In some applications. Organic solvents as hydrocarbons are used to clean parts. They are efficient to clean but has a very high boiling point. HFOs and HFEs are used to rinse the parts (remove the hydrocarbon) or remove particles thanks to its low surface tension. with the low boiling point of the HFOs and HFEs, the part can dry very quickly. The solvents are recondensed in the process to avoid any evaporation / losses in the process. Without HFE, HFOs, the part never dries out and cannot be used.	
Transport		Roller	PTFE
Textile, upholstery, leather, apparel and carpets (TULAC)	Industrial Wastewater treatment	PVDF Membranes for wastewater treatment. Ultrafiltration and microfiltration membranes constructed of PVDF are specifically used in membrane bioreactor applications to reach wastewater discharge limits in all industries	

- 594 missed PFAS uses.
- 297 partially covered PFAS uses.



Compilation of a non exhaustive list missed and/or partially covered PFAS uses

- WHY ?

- Provide a more complete picture of the wide range of PFAS uses.
- To label uses that were not completely considered to help them understand which sectors may also require a derogation.
- Elaborate further on specific uses and demonstrate where and how they are used.
- Sectors that were not included or not thoroughly covered in the proposal:

- Aerospace
- Industrial equipment
- Electrical applications
- Nuclear
- Pharmaceuticals
- Pulp & paper
- Mechanical /Plant engineering
- Biotechnology
- Water & Wastewater treatment
- Personal Protective Equipment
- Carbon capture
- Spare parts
- Agriculture
- Personal care products



THANK YOU !



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