



Submission feedback to proposal PFAS restriction

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General Feedback

The European Safety Federation (ESF) was founded in 1991 by national organisations each representing the manufacturers and suppliers of Personal Protective Equipment (PPE) in their country, to represent them at government level of the European Union and other European institutions and instances (ESF is member of the PPE Expert Group at DG GROW and an accredited stakeholder at ECHA). ESF focusses on PPE designed for professional use, without ignoring the consumer market.

Today, ESF represents over 600 companies (manufacturers, importers, distributors and service providers), of which at least 70% are SMEs. The members of ESF and the enterprises that affiliate to the national federations are dedicated and committed to provide compliant CE certified and high quality PPE. Moreover, they link quality and service by giving expert advice and assistance in the process of risk assessment and analysis as well as training and advice in all aspects related to PPE. Supporting a safety conscious way of life is a common interest to all of us.

Sustainability in all its aspects is high on the agenda of the Federation and its members, obviously without jeopardising the primary function of PPE : protecting the wearer against risks for his/her health or safety. Specifically for PFAS we continue to work with our members and the complete supply chain to raise the awareness on and understanding of the topic and encourage actions to investigate alternatives.

We do understand the reasoning behind the proposal and support the intention to restrict substances that have a proven negative effect on the health of citizens and by extension to the environment. Scientific knowledge about substances is evolving over time and obviously new insights have to be taken into account. However, careful considerations should be taken into account when it comes to proof of risks as well as to alternative solutions. It is certainly not acceptable that alternative solutions are being promoted that have not proven to be effective (as well on the functionality of the product as on the economic viability as on the sustainability).

ESF wants to emphasise that our response is not only in the interest of our members and the PPE sector in general, but also in the interest of the society as a whole, as the appropriate protection of the health and safety of citizens, both in professional and in private life, is an essential function of the concerned products.

Some further considerations :

- PPE are typically regulated under the **PPE Regulation** (EU)2016/425. However, a number of products/applications are excluded from the scope of the Regulation¹, even if the function of these exceptions is the same or similar. The exceptions are not related to the function, but rather to other applicable legislation for these specific applications or products.
- PPE represent a **wide range of products and applications** :
 - From sports to do-it-yourself to visibility vests and (electric) bicycle helmets in daily traffic (non-exhaustive list of private uses) or climbing equipment and helmets
 - From visibility to heat and flame to chemical to biological to mechanical to electrical to cold to noise (non-exhaustive list of types of risks for health and safety of individuals)
 - Chemical industry, utilities supply, renewable energy production, construction sector, textile industry, but also first responders and healthcare sector (non-exhaustive list of professional sectors where PPE are needed)
 - PPE specifically designed for police (maintenance of law and order) and military, even if for these applications, the products are excluded from the scope of the PPE Regulation², including use in private security services, they still have the same function and should therefore be treated in the same way.
 - As for the previous point, PPE for exclusive use on seagoing vessels or aircrafts are also excluded from the PPE Regulation³.
 - Respiratory protection such as the from COVID well known FFP2 and FFP3 masks to full face masks with air supply.
 - Firefighting and emergency response protective clothing and equipment for both professional and volunteer forces dealing with fires, accidents, floods, landslides and other disasters.
 - A wide range of materials (textiles, plastics, metals, ...) and components (seals, electronics, ...) are used in PPE
- The PPE Regulation requires manufacturers to take the **state of the art** into account⁴. The state of the art is reflected in the requirements in European (harmonised) standards. The PPE Regulation Guidelines⁵ clarifies that “Manufacturers of PPE cannot be expected to use solutions that are still at the research stage or technical means that are not generally available on the market. On the other hand, they must take account of technical progress and adopt the most effective technical solutions that are appropriate to the PPE concerned when they become available for a reasonable cost.”. This clearly obliges manufacturers to make sure that the most effective solutions are used, irrespective of whether restrictions exist or not. This legal obligation for PPE manufacturers must be

¹ Scope of the PPE Regulation (EU)2016/425 in article 2 / definition of PPE in article 3 (1)

² PPE Regulation (EU)2016/425 article 2, paragraph 2 (a)

³ PPE Regulation (EU)2016/425 article 2, paragraph 2 (d)

⁴ PPE Regulation (EU)2016/425 annex II, preliminary remark 3

⁵ Available on <https://ec.europa.eu/docsroom/documents/54277>

taken into account in the of any substance to avoid contradiction with the PPE product legislation.

- Manufacturers of PPE are often also manufacturing **similar protective equipment** for military and maintenance of law and order. But also manufacturing Medical Devices⁶ (e.g. medical garments, surgical drapes, medical masks and gloves, ...), workwear and other types of related products.
- Given the **wide range of materials and components**, as well as the number of **SMEs in the supply chain**, the dependence of suppliers is huge in the sector. A good part of the components are not only used in PPE but also in other types of products. An example of this would be seals that are essential in some PPE, but also in many other products.
- In terms of turnover, the **PPE sector is small** compared to many other. Research on the effects of and on alternatives for PFAS is focussing in first instance on the bigger application fields, not so much on PPE specifically. This also results in very limited availability of scientific studies on the impact of PFAS in PPE, as well on the side of the dossier submitters as on the side of the PPE supply chain.
- However, **PPE are essential for the protection of the health and safety of citizens** and lack of appropriate PPE will generate huge costs for the society, due to accidents or long health issues.
- The dossier submitters chose to group products. However, this leads to **some products not being considered in the proposal**. Indeed PPE are not to be limited to the TULAC group (Textiles, Upholstery, Leather, Apparel and Carpets) as was done in the preparation phase. Also the other considered groups did not take PPE into consideration.
 - Dossier submitters only considered textiles (TULAC – Swedish authorities), even if ESF did inform them about other types of PPE (see earlier submissions and papers⁷⁻⁸). So, it is clear that uses and products are included in the submission without any evidence.
 - PPE is linked to the Regulation (EU)2016/425 which excludes a number of sectors that use PPE, but are not considered in the proposal, such as
 - Military – armed forces : this may include military fire fighters, but also other clothing that have similar properties as other PPE, such as chemical or ballistic protection. CBRN applications are also to be considered.
 - Police – maintenance of law and order : private security personnel will also use some of the same equipment (e.g. ballistic protection), but also other types of PPE that have similar properties as PPE covered in the proposal

⁶ Medical Devices in the sense of the MD Regulation (EU)2017/745

⁷ See in annex document “Responses to questions – meeting with PPE companies (protective clothing)” dated 17/10/2021

⁸ See in annex document “Contribution 2nd consultation on a restriction for PFAS” dated 17/10/2021

- Some PPE are covered by both PPE and Medical Device Regulations. This became clearly visible during the COVID-crisis. However, this specific situation has not been taken into account in the current proposal.
- Level playing field / **fair competition** between EU production and imports
 - Without strong enforcement, a restriction makes no sense. Indeed imported PPE and materials/components will continue to contain PFAS while PPE or materials/components made in the EU will not. This results in unfair competition for the local industry, and ultimately to the disappearance of the PPE production in the EU.
 - The recent health crisis showed the need for local production of PPE. So the sector needs at least protection from unfair competition. We cannot believe that the aim of the restriction is to make it more viable to import from non-EU (EEA) countries, than to produce in the EU.
 - If in other global regions similar restrictions as the ones in the EU are not in place, the EU suppliers will already face export difficulties as EU production with PFAS containing materials/components will no longer be possible and thus EU production will face higher costs and/or less performing products.
- **EU autonomy** in supply chains : in view of the above remarks concerning fair competition there is a strong fear in the PPE supply chain that without derogations, it will become as good as impossible for the PPE supply to continue to work in the EU and certainly not to increase the autonomy of the EU for PPE that are critical for health or geopolitical crises.
- **Enforcement** of the restriction is crucial. This also includes the need to clear methods and interpretations of PFAS content in products.
 - Analytics methods (see also Question 10)
 - We see cross-contamination in production and testing (materials not containing PFAS contaminated by PFAS in e.g.
 - the tubing systems in the production machines,
 - PPE in use contaminated with PFAS, e.g. when used in activities involving products with PFAS (e.g. end-of-life treatment),
 - After finding PFAS in products that are not supposed to contain PFAS, a manufacturer made further analysis and came to the conclusion that the samples tested were contaminated with PFAS due to the fact that the water in the laboratory contains PFAS. So leading to false positives.
- **Consequences for society** if effective PPE are not available :
 - direct consequences for health and safety of users of less effective PPE and thus for society as a whole (e.g. healthcare costs, but also effects on mental health and wellbeing in general).
 - But also : if e.g. firefighters, first responders, police, military cannot be efficiently protected against the risks they might encounter, this will lead to not operating in unsafe situations and thus higher risks for the population that need urgent help.

- Is it acceptable for society to take a step back in terms of protection of health and safety of individuals and to what cost ? this is also valid for industry and healthcare
- PPE manufacturers fear that if PFAS is widely restricted, producers of PFAS will decide **not to produce anymore** or make them no longer available in the EU. Even with a justified exemption for certain PPE, that would still mean that materials/components would no longer be available and therefore make the needed PPE no longer available.
- Current **existing or proposed restrictions** for specific types of PFAS take already to some extent the specificity of PPE into account.
 - Chemicals list in Annex A (elimination)
 - PFOA (C8) – derogation for PPE ended 4/7/2023
 - PFHxS (C6) – no specific derogation for PPE
 - Chemicals list in Annex B (restriction)
 - PFOS (C8) – no specific derogation for PPE
 - Chemicals proposed for listing
 - Long chain PFCAs (C9-C21)
 - Commission proposal for restriction of PFHxA (C6) – PPE derogations are included in the proposal
- The **total life cycle of PPE** has to be taken into account :
 - Efforts are made by PPE manufacturers to offer the highest level of **durability** for many of the products, of course taking into account the expected use of the PPE. Durability is a key element for sustainable PPE and thus cannot be ignored.
 - Depending on the type of PPE and the type of PFAS used, it might be necessary to **re-activate/re-apply** a finish to guarantee the needed protection level during the complete life cycle. This means that it is essential that the necessary products remain available for this step, not also during the derogation period, but even for an additional period. If that is not the case, the derogation period is de facto shortened as it will be impossible to maintain the protective characteristics of the PPE during the use phase.
 - The same remark is also valid for **spare parts** containing PFAS. Often the components containing PFAS need at some point a replacement during the life cycle. If these spare parts would no longer be available due to the PFAS restriction, that would mean that PPE that would still be functional for a longer period, would have to be disposed of, thus leading to unnecessary burden for the environment.
 - **Contamination during the production phase** of materials/components is a factor that needs to be taken into account.
 - During **the use phase** of PPE, it is very well possible that there is **contamination with PFAS**. This leads to challenges for the cleaning/decontamination process during the use, but certainly also for the end of life processing of the PPE. The contamination is not always predictable, which means that either all PPE where there is suspicion of

- PFAS contamination need to be treated separately or easy cost-effective methods must be available to test the presence of PFAS before the end of life processing.
 - Research is necessary to fully understand **all effects on e.g. the ageing** and the evolution of the protective properties during the life cycle of the PPE when using alternatives
- The **PPE suppliers are committed to work towards solutions** – research within the complete supply chain is ongoing, but needs more support and time to arrive to acceptable alternatives for all applications. In order to encourage this, ESF is working together with other associations such as e.g. FPP4EU/Cefic (chemical industry), Euratex (textile and clothing), ETSA (textile services), CEC (footwear). The contributions of those trade associations need to be considered as complementary to our own.
- Several companies from our sector participated in **Ricardo study** commissioned by CEFIC “Economic analysis of the impacts of a REACH restriction on the manufacture, placing on the market and use of per- and polyfluoroalkyl substances”. The results of this study should be considered as complimentary to this ESF contribution.
- Obviously, also **individual companies** active in the PPE sector submitted feedback to the consultation, often including confidential information. These are not necessarily repeated in the ESF contribution, but certainly contain additional information.

Question 1 Annex XV – Sector and (sub-) uses

- Only in the TULAC sector (including professional apparel, technical textiles, leather), PPE have been considered. However, PPE are not limited to the TULAC sector. This means that some PPE products have not been considered at all.
 - See Question 6 below for the missing uses.
 - PPE are not limited to professional use, but are also used by consumers to protect themselves in e.g. do-it-yourself or leisure activities. See definition of PPE in the PPE Regulation (EU)2016/425 and the earlier general comment.
 - In communication with the dossier submitters, we already indicated that not all PPE fit in the TULAC sector. This information was knowingly ignored by the dossier submitters. See documents submitted earlier in annex
- Textiles
 - The term ‘textiles’ is not clearly defined, which will lead to potential differences in interpretation. E.g. in the PPE segment of protective textiles, these should not be limited to woven or knitted fabrics but more broadly also to :
 - Non-woven
 - Coated
 - Laminated

- Ropes – braided or constructed otherwise (e.g. used in PPE against falling from heights)
- An important number of PPE products or combinations could be seen as hybrid because they contain textiles and or other materials/components (e.g. plastics, electronics) that may contain PFAS needed for the protective function. The wording of the derogation needs to be clear on the terminology to ensure that all PPE are meant and not only those included in the TULAC group.
 - Assembly e.g.:
 - Visors for heat & flame protection (e.g. electric arc flash protection, firefighting, foundry workers)
 - Footwear including textiles
 - Helmets including textile to be able to fix the helmet on the head or providing padding.
 - CBRN protective equipment
 - Ensemble e.g.
 - Chemical protective garment e.g. with/without incorporated visor, with/without (connectors for) gloves, with/without connectors for respiratory protective devices, with/without footwear or bootees.
 - Layered clothing system
 - Helmet with or without visor
 - Smart PPE including electronics
 - PPE with integrated electronics (e.g. hearing protectors with integrated communication system)
- Care should be taken to include in derogations all concerned products. Not only those CE marked to the PPE Regulation (EU)2016/425, but also those products that are excluded from the scope (e.g. military, maintenance of law and order, seagoing vessels and aircrafts). Also a note needs to be made that the PPE Regulation foresees the possibility for PPE without CE marking, this is e.g. the case for products in the design phase that are for wearer trials, for demonstration or used for testing/certification procedures. These must be treated in the same way as fully CE marked PPE.

Question 5 Annex XV – Proposed derogations

- Care should be taken to include in derogations all concerned products, not just textile materials. Not only those CE marked to the PPE Regulation (EU)2016/425, but also those products that are excluded from the scope (e.g. military, maintenance of law and order, seagoing vessels and aircrafts). Also a note needs to be made that the PPE Regulation foresees the possibility for PPE without CE marking, this is e.g. the case for products in the design phase that are demonstrated or used for testing/certification procedures. These must be treated in the same way as CE marked PPE.
- See documents in annex with feedback to Swedish authorities dated 17/10/2021 which contain proposals.

- Appendix A.3.3. (table A.78) of the proposal only contains protective clothing, gloves (as dealt with in the CEN TC 162) and some footwear. This strengthens the uncertainty concerning the definition of textiles in this context as also other PPE are made of or contain textiles. A known example are the single use FFP masks.
- The proposed derogation is limited to category III (a) and (c). However, as demonstrated, oil repellence is crucial for the protection against other risks, not only in category III for use in industry (welding, heat and flame, electric arc, chainsaw, ...), but also in military and police applications (see e.g. CBRN, Molotov cocktails, ballistic protection) and also for protection against cuts from chainsaws (category III (j)) and in all heat and flame protection as well as in visibility clothing. In the last examples, the effect of oil repellence is indirect, but essential. Indeed the properties of the materials will be severely negatively influenced by possible absorption of oily substances and therefore require protection against these oily substances. Till today, this is only feasible using PFAS at least C6 (mostly based on PFHxA) containing finishes or materials. See confidential information provided to ESF by individual companies on repellence testing on fire fighter garments, which is also valid for other types of garments where repellence for chemicals is a requirement.
- For textiles (garments, gloves and even footwear) the major needs for PFAS, be it as finish are as one of the layers in the system, are repellence and barrier to penetration.
 - Chemical and biological agents
 - See earlier provided information for specific PFAS restriction (e.g. C8 versus C6 chemistry).
 - CEN TC 162 WG 2 provided material specifically for firefighter equipment.
 - Even with the transition from C8 to C6 chemistry for the finish of textiles, the repellence and penetration performance with butan-1-ol and o-xylene are diminished. Non-C6 based repellence finishes have so far proven to be effective for water, water based chemistries (such as weak acids and bases) but not effective against oils, alcohols and other organic solvents or chemical (including gasoline and other petroleum products).
 - Alternative PFAS free solutions manage to obtain acceptable repellence/penetration levels for relatively weak acids and bases, but not for concentrated acids and bases, as well as for solvents or oily substances. Even when it is possible to claim type 6 chemical protection with these PFAS free alternatives, the needs for a part of the industry (and certainly for firefighters) are not met with these finishes.
 - If a protection against a wide range is needed, PFAS are even more critical to achieve the required level of protection. In the case of protective gloves a remark must also be made concerning dexterity and mechanical resistance. Even if alternatives would offer a similar level of protection than the current PFAS solution, if dexterity and mechanical

resistance is lower (which is currently the case for the alternatives that are being considered), the gloves are not suitable for use. Indeed less dexterity means that the wearer is not able to perform the job as required and less mechanical resistance means that chances that the glove will tear or get punctured during use is unacceptably high, leading to safety risks.

- Oil repellence and penetration : see above
- Water : no need for PFAS, alternatives are available
- Situations where combination of repellence/penetration with heat and flame retardance is necessary, are even more critical for the use of PFAS solutions to ensure that the heat and flame retardancy, which is the primary protection is not compromised by soiling from oil, petroleum products or other flammable solvents.
- For the alternatives, durability has to be a key element. Shorter life time of PPE leads to higher volumes of waste, which of course has to be avoided as creating new risks and challenges.
- Remark : while we recognise that referring in the text of the proposal to (European) standards can be useful to clarify the products involved, it should be avoided in final proposals as standards do evolve (newer versions, different references, ...), which in the longer term could lead to interpretation issues. It also has to be taken into account that the requirements in the standards are primary requirements, secondary levels of protection are usually not included.
- Proposal for text for derogation :
 - By way of derogation, paragraphs 1 and 2 shall not apply to:
 - b. Personal protective equipment (PPE) as well as textiles and other materials and components used in PPE intended to protect users against risks as specified in Regulation (EU) 2016/425, Annex I, and where the functionality (protection of the wearer of the PPE and/or protection of the protective function of the PPE) requires the use of PFAS as part of their
 - (i) manufacturing process,
 - (ii) finishing or repellence, or
 - (iii) components or parts,until 13.5 years after EiF;
 - c. Personal protective equipment (PPE) as well as textiles and other materials and components used in PPE in firefighting activities intended to protect users against risks as specified in Regulation (EU) 2016/425, Annex I, Risk Category III (a) - (m), until 13.5 years after EiF;
 - d. similar to the articles referred to in paragraph 5b and 5c, the articles with similar function but excluded from the scope of the PPE Regulation (EU)2016/425. This includes PPE specifically designed for maintenance of law and order and armed forces (including private or semi-private security personnel) and for exclusive use on seagoing vessels or aircrafts, until 13.5 years after EiF;
 - e. similar to the articles referred to in paragraph 5b and 5c and 5d, these articles in the design phase, e.g. samples for testing, wear trials or demonstrating, until 13.5 years after EiF;
 - f. impregnation agents for re-impregnation and spare parts of articles referred to in paragraph 5b, 5c, 5d and 5e until 13.5 years after EiF (note : this point might

require a longer period to allow for the products to be used till the end of the expected life.

Question 6 Annex XV – Missing Uses – Analysis of alternatives

- See information provided to Swedish authorities (annexes “Responses to questions – meeting with PPE companies (protective clothing)”, dated 17/10/2021 and “Contribution 2nd consultation on a restriction for PFAS”, dated 17/10/2021)
- PPE other than those included in the TULAC group were not at all or only partially considered so far. For PPE, protection against risks given in the following list need to be considered, not only in the TULAC group.
 - the risks as in the PPE Regulation annex I for cat III :
 - substances and mixtures which are hazardous to health – only considered for TULAC
 - atmospheres with oxygen deficiency – only considered for TULAC
 - harmful biological agents – only considered for TULAC
 - ionising radiation – only considered for TULAC
 - high-temperature environments the effects of which are comparable to those of an air temperature of at least 100 °C – only considered for TULAC
 - low-temperature environments the effects of which are comparable to those of an air temperature of –50 °C or less – only considered for TULAC
 - falling from a height – only considered for TULAC – PFAS not essential
 - electric shock and live working – only considered for TULAC
 - drowning – only considered for TULAC
 - cuts by hand-held chainsaws – only considered for TULAC
 - high-pressure jets – only considered for TULAC
 - bullet wounds or knife stabs – only considered for TULAC
 - harmful noise – only considered for TULAC.
 - Other risks / products than category III, as well as those PPE excluded from the PPE Regulation (see also general comments on this aspect) – none of those were considered by the dossier submitters
 - Static electricity
 - Mechanical action
 - Vibrations
 - Friction
 - Impact with other persons or objects (e.g. falling objects, sports applications such as different types of protectors for e.g. bicycle or horse riders)
 - Superficial mechanical injury

- Rescue equipment and similar such as anti-avalanche airbags
- Motorcycling equipment (including helmets)
- High visibility equipment – partly considered for TULAC
- Protection against UV radiation
- Swimming/diving goggles and masks
- Ski goggles / helmets
- Equipment for different types of leisure activities (e.g. cycling)
- Welders equipment (including welding screens)
- Protection against insects / animals (e.g. tick bites, beekeeper equipment, ...)
- Weather conditions / adverse atmospheric conditions
- Anti-slip footwear
- CBRN protection
- Respiratory protection, see e.g. COVID protection up to full face masks.

Not all of the above require PFAS, however some do. Further research is necessary for all the applications. See also the general comments provided.

- PFAS free PPE might get contaminated with PFAS during the production and use phase – see general comments provided
- Proposal for text for derogation :
 - By way of derogation, paragraphs 1 and 2 shall not apply to:
 - b. Personal protective equipment (PPE) as well as textiles and other materials and components used in personal protective equipment (PPE) intended to protect users against risks as specified in Regulation (EU) 2016/425, Annex I, and where the functionality (protection of the wearer of the PPE and/or protection of the protective function of the PPE) requires the use of PFAS as part of their
 - (i) manufacturing process,
 - (ii) finishing or repellence, or
 - (iii) components or parts,
 until 13.5 years after EiF;
 - c. Personal protective equipment (PPE) as well as textiles and other materials and components used in personal protective equipment (PPE) in firefighting activities intended to protect users against risks as specified in Regulation (EU) 2016/425, Annex I, Risk Category III (a) - (m), until 13.5 years after EiF;
 - d. similar to the articles referred to in paragraph 5b and 5c, the articles with similar function but excluded from the scope of the PPE Regulation (EU)2016/425. This includes PPE specifically designed for maintenance of law and order and armed forces (including private or semi-private security personnel) and for exclusive use on seagoing vessels or aircrafts, until 13.5 years after EiF;
 - e. similar to the articles referred to in paragraph 5b and 5c and 5d, these articles in the design phase, e.g. samples for testing, wear trials or demonstrating, until 13.5 years after EiF;
 - f. impregnation agents for re-impregnation and spare parts of articles referred to in paragraph 5b, 5c, 5d and 5e until 13.5 years after EiF (note : this point might require a longer period to allow for the products to be used till the end of the expected life.

Question 10 Annex XV – Analytical methods

- Single material or single product : PPE contain several materials, it needs to be clarified how the PFAS content has to be determined in such cases.
- Multiple articles can be made available on the market as a single PPE product (e.g. complex chemical / CBRN suits). Also for these cases, clarity on how to determine the PFAS content is necessary.
- Degradation / contamination during production or use of PPE products : at what time in the life cycle must the PFAS content be determined ?
- It is necessary to consider the source of PFAS measured in/on products. The manufacturer of the PPE is not necessarily the source – see cross contamination but also contamination in testing facilities that can have an influence on the measurement. See confidential test reports in annex
- Further clarification on the accuracy of testing of thousands of PFAS substances in thousands of different products is necessary.
- The analytical methods are key for the enforcement of any restriction. If it is impossible to measure correctly, a restriction only leads to frustrations at all levels of society.
 - o A PFAS report by the US National Science and Technology Council also acknowledges the issue with analytical methods when it comes to PFAS testing and outlines a series of actions in order to address research gaps
See : <https://www.whitehouse.gov/wp-content/uploads/2023/03/OSTP-March-2023-PFAS-Report.pdf>
 - o A report commissioned by the Norwegian Environment Agency looked into the available analytical methods for 17 specific uses/ matrices and showed the current limitations of the standard methods available for measuring PFAS. It concluded, amongst others, that: (i) no standards available for total organic fluorine methods or the total organic precursor assay, (ii) Total fluorine methods will not provide concentration for single substances, (iii) no standard methods found to measure specific PFAS in some uses (e.g. electronics and electronic equipment incorporating semiconductors, F-Gases and refrigerants, medical devices and medicinal products, cosmetics, oil gas and mining, metal plating, flame retardants and resins), (iv) etc.
See : <http://norden.diva-portal.org/smash/record.jsf?pid=diva2%3A1642999&dswid=-5818>

For info, no information from ESF for the following questions

- 2 : emissions in the end-of-life phase
- 3 : emissions in the end-of-life phase (waste management)
- 4 : impacts on recycling industry
- 7 : potential derogations marked for reconsideration (none marked as such for the PPE derogations included)
- 8 : other identified uses – analysis of alternatives and socio-economic analysis

- 9 : degradation potential of specific PFAS sub-groups - need to be answered by companies producing PFAS

Annexes

- “Responses to questions – meeting with PPE companies (protective clothing)”, dated 17/10/2021
- “Contribution 2nd consultation on a restriction for PFAS”, dated 17/10/2021
- Confidential documents