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PFAS CONSULTATION

Brief description of the nature of ETSA business

The European Textile Services Association (ETSA) represents textile rental firms, suppliers of detergents, machinery, fabrics and garments, as well as national associations in the textile services. ETSA is a not-for-profit organisation and was set up in 1994 to represent and promote the interests of these market-leading companies in Europe. Industry turnover in Europe amount to approximately €12 billion. We employ some 140 000 persons.

Textile services offer supply, rental and maintenance of textiles:

- Workwear and protective clothing for industry and services
- Hotel and restaurant linen
- Surgical and hospital textiles
- Dust mats and mops
- Dispenser textile towels for hand drying in washrooms and other washroom services
- Reusable industrial wipers

About Textile Care and PPE

Professional textile care increases the longevity of textiles and thus lowers the overall ecofootprint of textiles in the EU.

Moving towards climate-neutrality and speeding up the transition towards a circular economy with an ambitious textile strategy is therefore essential for the overall sector, PPE included. Sustainability and the environment are at the heart of the ETSA circular business model and we strive to actively engage with and support the goals outlined in the European Green Deal.

With focus on PPE, there is no doubt reusable materials can ensure safety while also allowing consumers to drastically reduce the amount of waste. Reusable solutions can make a significant contribution to achieving the EU's climate policy goals as well securing local supply chains with a reliable source of PPE. PPE, workwear and medical devices are crucial today, and this is even more true after the COVID pandemic, while also being strategically important for Europe, from its large companies and SMEs.

Responsible use of PFAS that have not yet equivalent substitutes in essential products, such as PPEs, could not only have a detrimental impact on the EU market for PPEs but also determine a clear gap in the EU health and safety availability of products, across the EU single market and beyond.

COUNCIL DIRECTIVE 89/656 of 30 November 1989 on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace should be a clear and useful guideline for your revision process, as this clearly highlights the health and safety angles which characterise PERSONAL PROTECTIVE CLOTHINGS (PPEs) and make it a crucial product in today's Europe.

Questions 1 & 2: Critical properties (performance) for protective clothing and Standards for PPEs

According to ETSA companies, **Table 1** has captured most of them. For instance, EN 13034 (against small chemical splashes) and EN 343 (against rain) are the most relevant standards. In addition to them, you should consider also EN 14419 whilst not a Standard for protective clothing, it does measure oil repellence.

The majority of ETSA companies have also highlighted that they did not perform internal analysis for alternative to C6 FC technology, simply as none substance passed matching the requirement or featuring alike the existing C6 treated products, in terms of oil repellence at their manufactured condition.

For those companies who attempted to check whether the use of alternatives was feasible, they found 50% of proposed solutions had a weak response based on ISO 24920 testing procedure to water repellence, after single wash.

The durability of water repellence to progressive washing cycles was reduced faster and with no linear behaviour.

Features like soil release, oil repellence, fluids repellence in the healthcare and chemical protection to liquids and spillages of low surface tension hydrocarbons would be no longer guaranteed and this will negatively impact the final product.

For some alternatives to PFAS indicated, we would like to raise the fact that many of them are flammable and are a real risk for PPE against flame and heat. Those alternatives (silicone, wax, paraffines) cannot be used in laundries because this would create serious health and safety issue for business owners and employees. Other alternatives such as membranes can be used in a mild environment as well as silicone as these products tend to stick on surfaces, but they are not used in workwear environment (for reasons of contamination and being extremely expensive) but are instead more commonly used in fashion textiles.

In addition, the process of reimpregnation which characterizes PPEs is mandatory to keep their performances and we would strongly encourage you to reflect on this aspect.

Certified protective clothing needs to be re-impregnated and reactivated by heat to maintain the protection according to the EN standard. A re-impregnation in an industrial laundry is a treatment to offer a high level of protection against water, oil and chemical repellent.

An industrial laundry is capable of carrying out this process. The basic requirement for this is a specially matched combination of washing technology, professional laundering hydrophobic agents, and drying technique.

In order to make the best possible use of the active ingredients used, the load ratio should be as short as possible at a pH of 4.5 to 5.5. After a treatment period of 10 minutes and a short spin-off it should be dried at least 10 minutes at Temperatures > 80 °C.

The necessary drying temperatures must be reached so that the re-impregnation has its full water-repellent effect.

In the case of older textiles in which the material is already roughened it should also be pointed out that the material no longer absorbs the impregnation properly and the textile should be replaced.

For quality inspection of impregnations there are suitable procedures:

- DIN/EN 24920 (spray test): According to this standard the resistance to surface wetting of fabrics can be determined.
- Test Method AATCC 118 for the determination of the oil-repellent: This test method is used to determine the existence of finishing compounds capable of imparting a low energy surfaces by evaluating the fabric's resistance to wetting. The **oil repellency** grade is the highest numbered test liquid that does not wet the fabric surface.
- N/EN 20811(waterproofness. This is a hydrostatic pressure test that increases the height of the water column and is determined by the withstanding of an impregnated piece of textile.
- DIN 32763 (chemical resistance): A certain amount is placed in a hollow formed from the test textiles and wetting/penetration depending on the time determined
- DIN EN ISO 6530:2005: Specifies a test method for the measurement of indices of penetration, absorption and repellency for protective clothing materials against liquid chemicals, mainly chemicals of low volatility.

At the moment the repellence against certain chemicals, as well as water and oil repellence on the products is achieved by impregnating the material with C6, and for now, there is no available alternative. The change from C8- chemicals to C6 has brought problems in itself which needed to be adjusted.

A ban would mean that there will not be any method to achieve the needed protective level against certain chemicals, especially in working environment, where only protection against small amounts and light sprays of chemicals is needed. We are thinking of those environments where a fully enclosed gear/suit is not needed, and the need in the market for this kind of PPE is high.

Any further limitation, not to mention a complete ban, without an equivalent option would be devastating to PPE industry from material suppliers to manufacturers to other liaisons industry, and of course to the end user, who will be left without their protective clothing.

The environmental aspects are very important and the development of products fulfilling the corresponding demands in the standards and PPE-regulation needs to be a priority.

3 – Potential Alternatives to PFAS

According to ETSA companies, for listed **non fluorinated alternatives** (and possibly other) to fluorochemistry, the biggest challenges at stake could be flammability and durability – physical testing and colour fastness. Some companies pointed “dendric and silicones” nevertheless, they do not consider these substances as really “sustainable alternatives” to cover for all the needs of important PPE products.

In addition, among the FC alternatives listed, some of our companies are familiar with paraffins and waxes but in each of these compounds the problems are the same:

- poor or almost no oil repellence
- poor or almost no repellence to oily or greasy dirt
- poor or almost no solvent repellence
- no chemical protection
- reduced durability to washing
- difficult reproofing; in case of reproofing, possible effects of build-up to be studied
- no resistance to dry cleaning
- affinity of the chemicals with fatty dirt consequently more difficult to be properly removed from the textile (cleaning) with possible negative side effect on other performances
- Impossible coexistence of multiple functions, eg flame retardant and repellence, using some non-fluorinated alternatives (e.g. paraffins and waxes) because these chemicals play against the primary performance
- worsening of some performances not strictly related to liquid repellence, for example pilling.

ETSA, in its new role as CLIMATE AMBASSADOR (appointed by the EU Commission in July 2021), will certainly encourage some important educational tools (webinars/conference) to promote discussions on alternatives and debate thoroughly the future of PFAS in synergy with the national governments.

We believe though that a complete and sudden ban in this specific segment of our industry dedicated to PPE (personal protective clothing) could result in a detrimental impact to both our SMEs and large companies as real alternative to PFAS do not really exist for these type of products .

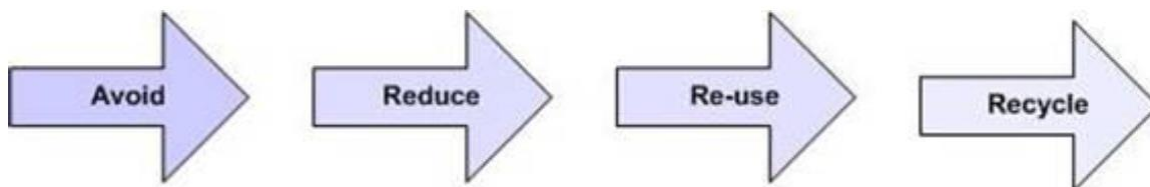
4. Quantity of PFAS in PPE

We understand EURATEX, of which ETSA is an active member, might be in a position to provide some more thorough data on this aspect

Agenda point 5 – Emissions and waste management

We understand that large companies have ultra-filtering systems and specific wastewater treatments in place (not going to sewage). As for end-of-life treatment, PPEs are incinerated as hazardous waste. This is not a legal obligation.

Some large companies at ETSA already operate a zero discharge to effluent policy when using C6 products. As a responsible finisher and bluesign system partner they have developed management principles for the use of C6, and other active substances based on the waste hierarchy:



- Avoid and substitute where possible e.g. non fluorinated chemistries where only water repellence is required
- Use of optimized chemicals from bluefinder
- Recipe optimisation techniques based on performance requirements
- Automated dispensing based on 'Run to Dry' concept to prevent mix overruns and unnecessary waste. This system has the ability to accurately calculate pick up and exact liquor requirements.
- Prevention of cross contamination using automatic dispensing system
- Optimised application methods
- Smart Production scheduling to minimise changeovers and frequency of use
- Standard Operating Procedure (SOP) developed for entire application and collection of minimal residual C6 for hazardous waste disposal.
- Strict adherence to supplier application conditions as per TDS/SDS

Other companies work in close synergy with their local authorities and monitor/undertake regular assessment of water management processes, with excellent results - which show no problems at all for bio-diversity and potential danger of cross pollution.

As for atmospheric release, no data specifically related to C6 is available for ETSA companies. Based on information given by the suppliers the emissions data levels based on sales product can be as low as 20ppm. In use the active is used in diluted form and applied in line with recommendations from the supplier.

