Berlin, 25.09.2023

Response of the Confederation of the German Textile and Fashion Industry (t+m) to Public Consultation on the U-PFAS restriction

The Gesamtverband textil+mode represents the interest of 1,400 small and medium-sized companies in the German textile and fashion industry with more than 132,000 employees. As a member of EURATEX we have also actively contributed to the opinion of our European umbrella organisation (EURATEX) (separate statement to ECHA)). With our statement we draw the attention to the German input/situation (Associations of the German Textile Industry).

Flourchemistry for textiles is an important driver for progress, technology, health care, innovation and environmental and climate protection. First of all, it should be stated, that the textile industry is not at all opposed to a restriction of chemicals (here: PFHxA) on everyday items such as rain jackets (for which relatively good alternatives for water re-pellency are available). For ordinary consumer outdoor apparel that only requires water repel-lency, fluorine free alternatives are available and already in use (e.g. formulations based on paraffins, polysiloxanes, modified melamin resins; polyurethanes; dendrimers; polyacrylates) Combinations of these substances can provide meanwhile good permanences in laundering. Textile treatment with fluoro- and fluorinated polymers provides many protective functions for humans and the environment.

The textile industry supplies its special products (technical textiles) as a cross-sectional technology to all industries and value chains. Our products are almost always components of complex and technically highly effective products, which - depending on their function and technical requirements - have to be equipped with different PFAS (fluorcarbons (e.g. PFHxA) and also Fluorpolymers (e.g. PTFE). It therefore has to be avoided, to allow the use of e.g. PFHxA in e.g. PPE in the PFHxA regulation (present at the stage of draft), while the use of PTFE membranes in PPE should then be prohibited under the PFAS restriction.

It is important for us to state, that the textile industry aims not for a general derogation for technical textiles but only for a derogations for high-level technical textiles that have to filfil highest standards and requirements to keep up the level of protection for workers and the environment.

Question 1: Sectors and (sub-)uses: Please specify the sectors and (sub-)uses to which your comment applies according to the sectors and (sub-)uses identified in the Annex XV restriction report (Table 9). If your comment applies to several sectors and (sub-)uses, please make sure to specify all of them.

t+m response:

The U-PFAS Restriction puts the high EU- level of protection for EU-Citizens/consumers, workers/occupational safety, environmental protection etc. at high risk to be banned. Many legislative standards, certifications etc. for e.g., protection textiles, EU flame restistant-material and legislations could not be kept any more in the future.

For us, the question is whether the applications of PFHxA, which are outside the scope of the PFHxA proposal currently under discussion, will be discussed again in the PFAS restriction proposal or whether we are only looking at PTFE applications here, which are also important for many textiles and are used as yarns and fabrics as well as for coatings. The areas of application are diverse, sometimes mixed, see attached confidential appen-dix 1.

The restriction proposal on U-PFAS submitted by ECHA is of high importance for the German textile industry. The results of the survey of affected companies showed that in quite a few cases nearly the whole product portfolio will be affected by the announced restriction (see confidential

Annex I). This includes medical textiles, for critical areas of reusable surgical gowns and drapes, as well as multilayer laminates for Personal Protective Equipment (PPE) against wet, cold, bacteria, viruses, dirt, oil, heat, flame and other external influences relating to care, durability and physiological stress reduction (breathability) as it also concerns high-tech products for environmental protection, automotive, construction and many others.

From our point of view the draft of requirements and restrictions does not consider the current best available technologies. Manufacturers will face high difficulties in conforming with the targeted requirements (due to regulatory or customer needs). Not only does the intended restriction contradict the technical requirements due to the lack of alternatives in performance during use and after laundry. Alternatives fullfilling the requirements (standards etc.) are not available or still under development. Losing the entire fluorocarbons would also imply that our members would no longer be able to deliver into this market. Personal protective equipment (PPE) applications represent in many cases more than 75% of their product portfolio.

Moreover, it is also not foreseeable which future applications will still urgently need the unique properties of PFAS.

The specialized EU technical textile companies and also EU-textile trademarks will technically not be able to compete with technical textiles from mainly Asian, South and Middle-American markets, which are not controlled by such restrictions. European companies will lose their competitiveness as their products will offer lower performance or often not meet standards.

Textile treatment with fluoro- and fluorinated polymers and the use of PTFE provides many protective functions for humans and the environment. Technical textiles produced in the EU are delivered as cross sectional B2B-products to other high-technology industry sectors in the EU to produce a variety of high value products. Many medium-size EU companies are highly specialized in the field of technical textiles and produce world-marketable products with a specific high performance level.

It is a fact, that products, for which is water repellence in connection with oil, stain, biological, blood and chemicals repellence is essential, this combination of effects can only be provided by fluorinated (side-chain-)polymers. If oil, stain and chemicals repellence is essential there are also no fluorine-free alternatives available.

E.g. in medical textiles, in addition to water, oil, dirt and chemical repellence, resistance to viruses and bacteria is an important factor that makes PFAS essential for medical textiles. Both woven and non-woven medical textiles, require the highest standards of safety to protect wearers, patients and equipment. Evidence from companies producing medical textiles suggest that C6 is at minimum required to pass EN 13795 (part 1 and 2), EN 14126 (in combination with chemical protection) and EN 14683 standards. EN 13795 applies to both disposable and reusable medical textiles, while EN 14683 applies to reusable and surgical masks and reusable protective clothing.

Specific uses

In parallel to EURATEX's answers to the questions in the ECHA's public consultation and use sectors outlined in table 9, please note that t+m is submitting a separate confidential PFAS Database (Annex I) collected with a direct consultation with German manufacturers of textiles products through. Colour markings indicate whether fluorocarbons, fluoropolymers like PTFE or mixed applications are involved.

The entries in the t+m PFAS Database (representative for Germany) are elaborating (like the EURATEX PFAS Database) on the following points:

- Category: it indicates the type of textiles application as usually identified in the industry, e.g. apparel (including PPE), medical, mobility, industrial, geotextiles etc.
- Use: it indicates typical application as professional uses, industrial, consumers or others
- Subcategory-uses: it further details the use and provide examples
- Technical function: it specifies required performances as oil-repellence, water-repellence, flame retardancy, stain-resistance, soil protection
- Comment: it provides additional information and clarification
- Standards/Approvals/Test methods: it specifies which standards must be fulfilled to guarantee the requested performances; test methods and approval procedures may also be included.
- What PFAS: indicates what substances or PFAS-group is used
- What is the minimum concentration of PFAS that is necessary to maintain function (to be in accordance with standards or customer need)

A number of specific questions attempt to investigate companies' experiences with substitution, alternatives, etc. namely:

- "Did you try to substitute PFAS? […] "
- "Do you have data or other experiences for reduced service life (alternatives)?"
- "Please explain shortly the technic for the wastewater management […]"

The information included in the t+m Database (Annex I – confidential) is here referred as essential use as it indicates most (but not all) textile products for which based on the available inputs there is no suitable alternative to the use of PFAS.

In the absence of appropriate derogations in the restriction process, these products would not be able to guarantee the requested performances, including those for health and safety, and therefore they would not be produced.

In addition to the examples provided in the t+m database (Annex I), the following are some "generic" examples of technical textiles that would need to continue to use PFAS due to technical reasons and the fulfilment of standards:

- PTFE Fabric: The film ribbon twisted into yarn is cut from PTFE film. This type of fabric is e.g. used for textile construction (long durability = resource saving)
- PTFE Laminate: PTFE membrane is laminated with textile and is used as virus-proof surgical clothing. The laminate fulfills the highest requirements and provides outstanding protection and at the same time high wearing comfort (breathability) for the operating room team. Standards has to be met: e.g. DIN EN 31092 (breathability); ASTM F 1670-17 (blood penetration); ASTM F1671-13 (bacteriophage penetration); DIN EN 20811 (liquid penetration continuous load)
- PTFE membranes are used in fire protective clothing to produce waterproof yet breathable protective equipment. This area is absolutely dependent on PTFE membranes, as all other membrane systems cannot achieve the required operating temperatures and fire classes. Standards has to be met, e.g. DIN EN ISO 11611 (fire classes); DIN EN 469:2020 (performance requirements for fire protection clothing)
- PTFE membranes are also essential for chemical protective clothing. Only PTFE is resistant to most chemicals and still ensures high breathability. Standards has to be met, e.g. DIN EN 14605; DIN EN 13034.

- C6 treated textile carbon fibre-based fuel-cell membranes
- C6 treated textile electronic protection plasters
- Textiles for renewable energy production, e.g. in the construction of blades for wind turbines[1]
- Textiles in engine bays in the automotive and aerospace industry (to keep EU and international Flame-Retardant Standards)
- Home Textiles in combination with Flame-Retardant Properties[2] (to keep EU and international Flame-Retardant Standards)
- Textiles for construction with Flame-Retardant Properties (to keep EU and international Flame-Retardant Standards)
- Textiles related to the Food-Contact Material Regulation (EC) 1935/2004, e.g., C6-impregnated textile transport belts for the food industry
- Air and liquid filtration and separation media (woven/knitted/non-woven media, not paper media) that require a combination of water and oil repellence for filters used in industrial settings or by professionals, including but not limited to textile filter bags to treat polluted air in incineration plants, industrial fabrics for electronic devices, and others.
- Textiles designed for extreme weather conditions, e.g. fireproof & waterproof canvas for sleeping tents' and yurts' covers, awnings covers, camping covers, etc.
- Textiles related to technical building regulations, e.g. acoustic products with textile covering, geotextiles, etc.
- Anti-stain treatments for tablecloths, waterproof treatments for fabrics intended e.g. for umbrellas, raincoats, etc.
- Carrier fabric for industrial belts and tapes
- Carrier fabric for adhesive tapes
- Fabrics for sports equipment (balloon fabrics, spinnaker sails)
- Seat upholstery fabrics for buses and trains
- Seat upholstery fabrics for automotive

For more information see attachement (Presentation VTB/SWT about the use of PFAS in the Textile Industry) and t+m PFAS Database (confidential).

Additionally, we will draw your attention to the following applications:

Like already mentioned, the Dossier does not cover EXEMPTIONS for textile fuel cell membranes, fire-load minimised covers for important applications of vehicle engine compartments, hot gas filtration textiles used at waste incineration plants, UV- or sun-protective textiles, architecture and lightweight construction textiles, medical textiles or medical products, personal protective equipment for others than fireworkers, textile-based conveyor belts for the food industry, fire-load optimised household textiles and much more. We give some examples for function and technical reasons for "essential uses":

Personal protective equipment:
For the protection of workers and private individuals from hazardous influences risks in accordance with normative requirements, there is an urgent need for an exemption for the entire categories II and III. For Category I the exemption should apply when normative requirements demand compliance with 27,5mN/m² surface tension.

Protective clothing without or poor repellency properties bears the risk of increased water absorption under bad weather conditions leading not only to discomfort but to increased weight and physical stress of the wearer. A product not offering sufficient performance is very likely to

[1] See e.g. https://www.youtube.com/watch?v=CCME0_FjHCo
[2] See e.g. https://www.youtube.com/watch?v=WdPtbgSbP5Y

be replaced by materials from sources out-side Europe. Repellence effects against soiling, solvents and oil cannot be achieved with the currently available fluorine-free DWR[3] products. These are therefore no substitutes to C6 telomer fluorchemistry. The mentioned repellence is an essential factor for increasing the lifecycle. We want to point out that a long lifecycle and the high number of repeated uses in connection with rental services is an essential part of the EU and national strategies on circular economy. A restriction without technical alternatives would contradict these strategic objectives.

The function of protective clothing used in the context of occupational safety **is to protect the wearer (employee)** from harmful influences during work. This damage can be of thermal, mechanical, chemical or other physical nature. Often, the protective clothing protects against a combination of the hazards mentioned above, this protective function defines the difference between working clothes and protective workwear.

EU framework directive 89/391/EC regulates safety and health protection at work. In order to assess the risks at the workplace, the employer is obliged to carry out a risk analysis (89/656/EEC is implemented in Germany by the Occupational Health and Safety Act (ArbSchG), the PPE Usage Ordinance (PSA-BV) and the Workplace Ordinance (ArbStättV). The risk analysis is located in the Occupational Health and Safety Act §5). In particular, when assessing the possible chemical hazards, only the substances handled in the company/at the respective workplace are considered. The selection of the required protective clothing is the result of the risk analysis. Thus, there is a comprehensive set of regulations which obliges the employer to use only effective protective clothing and to take into account the personal interests of the employee (adapted work shoes, safety glasses with adaption to poor eyesight, non-allergenic protective clothing, etc.). It was not only after the Corona crisis that we came to the conclusion that dependence on the production of important protective textiles almost exclusively abroad could not guarantee a timely and sufficient supply. The production of high-quality protective equipment without the risk of qualitative and quantitative fluctuations must continue to be possible within the EU.

For examples of Category I and II of the PPE regulation see EURATEX statement.

Personal protective equipment for armed forces and in the maintenance of law and order

A lot of highly specialized companies deliver protective textiles to essential authorities like police departments, customs, Federal Border Guard (Bundesgrenzschutz) and fire departments in various European states. Protective textiles for military, police and law enforcement, respectively the protective clothing made of it are excluded from the PPE regulation. Here the requirements are specified by individual tenders and wearers are used to a high performance level. The same can be confirmed for special user groups like for instance agencies for technical relief (THW Technisches Hilfswerk) in Germany. These garments also do not belong to PPE regulation, even the design requirements and correct fit of the garment make it impossible or very difficult for EN ISO PPE certification.

Technical requirements for weather protection equipment for armed forces (e.g., Bundeswehr) contain requirements for oil repellency (AATCC grade 5 or higher after five washing cycles at 60°C). This would make it necessary to adjust public tender specifications under acceptance of lower performance and protection.

[3] Durable Water Repellence

Required repellence effects against soiling, solvents and oil cannot be achieved with the currently available fluorine free DWR[3] products. These products are therefore no substitutes to C6 or telomer fluorochemistry. At least C6-fluorochemistry must be applied to fulfill repellent requirements.

The auxiliaries ensure a wash resistant water-, oil-, chemical-, dirt- and blood-repellent finish, which protects the wearer from a variety of dangers. As the basis of the restriction is – as regards the finish of textiles – a contamination of the auxiliary chemicals in traces, i.e., in the range of micrograms per kilogram (millionth of a gram), we consider it as not balanced regarding the advantage of protecting the lives of people, especially as due to technical solutions even the emission of these traces is minimized.

Bulletproof textile waistcoats only work if they are absolutely dry. This is why this protective workwear is equipped with the highest demands in terms of water repellency, which can only be guaranteed by fluorinated polymers.

Bulletproof vests

It is ludicrous that useful bulletproof vests for authorities such as the police and border security guards are apparently to be abolished in the EU, for these items are equipped with C6 polymers to make them water-repellent. Fluorine-free coating – that is, without C6 polymers - will allow projectiles to glide through the aramid fibre layers as smoothly as butter, as it does not provide a sufficient barrier to moist.

The result will be lethal for the wearer, as is this proposed restriction for numerous textile companies and other EU industries. As the basis of the restriction is – as regards the finish of textiles – contamination of the auxiliary chemicals in the range of traces, i.e. in the microgram (millionth of a gram) per kilogram range, we consider it as not balanced regarding the advantage of protecting the lives of people, especially as due to technical solutions even the emission of these traces is minimised.

Bulletproof textile waistcoats only work if they are dry. This is why the highest demands are placed on this protective workwear in terms of water repellency, which can only be guaranteed by fluorinated polymers.

Medical textiles

Exemptions for medical textiles must include woven, knitted and nonwoven textiles (including re-impregnation). Medical devices (i.e., surgical drapes and clothing) are a 100% business in all european Hospitals. EVERY operation in Europe is required to be "covered" and equipped with surgical drapes and gowns. To protect both patient and wearer, either with disposable (nonwoven) or reusable (woven, knitted) materials. Therefore, the exemptions must be given for disposable and reusable products including reimpregnation. Although market shares in Europe are around 80/20 for disposable and reusable products, the performance of re-usable products is provided by specialised companies in the context of textile supply for hospitals (bed linen, workwear etc.). Every day only in Germany, around 1,000 tonnes of hospital linen are sustainably reprocessed for disinfection, without which no hospital could operate for more than two days.

Membrane laminates are used for reusable medical products such as surgical gowns and drapes in the high-performance risk classification area. These are designed and certified according to EN 13795 for the protection of patients and medical staff from liquids and microorganisms, some even provide a viral barrier. These reusable textile products are washed and sterilized and can be reprocessed up to 100 times in professional laundry services, reducing

the amount of medical waste significantly compared to disposable products. As an accompanying product and for the fulfillment of requirements in standard performance risk classifications, tightly-woven microfilament fabrics are finished with fluorocarbon chemistry to prevent i.a. the penetration of specific liquids which appear in the operating theater. There is no adequate alternative to C6 textile auxiliaries, containing only traces of PFHxA as an unintended byproduct to achieve the relevant performance on these woven fabrics.

Patches that are offered as medical products are also partly equipped with C6 chemicals. This applies in particular to plasters and plaster fabrics, which are offered rolled up. In this case, the fluorine-containing finish serves to make the patch rollable without the adhesive layer sticking to the outside or peeling off the inside. Replacement by other finishing chemicals reduce the durability of the products, especially at warm ambient temperatures. In addition, the adhesive layer would have to be formed with significantly less adhesive force, which would make the use of plasters and plaster bandages questionable in various applications.

Particularly noteworthy are textile carrier systems for transdermal plasters. These patches are medicines. They are stuck to the skin and release a medically active ingredient in a controlled manner.

Textile carrier systems for plasters are equipped with C6-fluorochemicals. This equipment serves to ensure a capable adhesive bond. During the development of these systems, attempts were already made to dispense with fluorine chemicals or to use alternative types of finishing. However, no alternative without C6 finishing came even close to meeting the required durability and adhesive properties of the plasters.

A short- and medium-term replacement of the C6 chemicals on the tissues, which are a component of drugs, would mean, if a viable replacement can be found at all, a new approval of the system, which would not only mean costs of several million Euros in addition to upcoming development costs, but also a development time of 5 to 10 years. These costs would ultimately have to be reflected in the price of the drugs or, if no replacement is found by the end of the use of the C6 chemicals, which is more likely, it would mean the elimination of these drugs.

Construction materials (awnings, sun protection etc.)

The strategy of the European Union regarding the energy optimisation of building envelopes makes summer thermal protection on windows indispensable in times of climate change. Automated solar shading makes an indispensable contribution to protecting buildings from overheating. In this way, enormous amounts of energy can be saved for artificial cooling in summer. And in winter, controlled heating of buildings can be achieved by ensuring that energy enters through the windows. Energy savings that also mean CO_2 avoidance. Part of the answer to these EU demands is the use of sun protection fabrics, which today are much more than "just nice to look at".

For these sun protection fabrics such as awning fabrics as well as fabrics for large umbrellas and sun sails, but also for boat and convertible top fabrics, there are NO alternative products to finishes with PFAS on the market so far that guarantee even approximately the same technical properties. In our products, the PFASs are bound and do not come into direct contact with humans and human skin during use. Production already takes place here in Europe in technically modern industrial plants that are extensively certified (ISO 9001, ISO 14001, ISO 45001).

Despite the use of PFAS, our products are extremely sustainable as they guarantee extremely long service lives of usually 20 – 25 years with the help of these finishes.

The planned restriction of the use of PFAS up to a complete ban would be truly devastating for the market of fabrics for external sun protection and would mean the end of an entire production sector in Europe.

It is therefore important that sun protection textiles are considered as a special category of technical textiles that are inextricably linked to the use of PFAS:

- None of the products currently on the market can replace C6 fluorocarbons in terms of water and oil repellency.
- This would lead to a drop in performance that the market would not accept, which would threaten the existence of our companies. At the same time, it would mean that the durability of the fabrics would be significantly affected. This would not be in the spirit of sustainability, as it would lead to a far greater amount of materials to be disposed of and thus a greater environmental impact.
- Without the current technical performance of our products, large parts of sun protection on buildings would no longer be conceivable.

For more examples see Annex I (t+m PFAS Database) and “Presentation VTB/SWT about the use of PFAS in the Textile Industry”.
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Question 2: **Emissions in the end-of-life phase:** The environmental impact assessment does not cover emissions resulting from the end-of-life phase. To get a better understanding of the extent of the resulting underestimation, (sub-)use-specific information is requested on emissions across the different stages of the lifecycle of products, i.e. the manufacture phase, the use phase and the end-of-life phase. Piease provide justifications for the representativeness of the provided information. In particular: a. Piease provide, at the (sub-)use levei, an indication of the share of emissions (as percentages) attributable to these three different stages. An indication of annual emission volumes in the end-of-life phase at sector or sub-sector levei would also be appreciated. b. If possible, please provide for each (sub-)use what share of the waste (as percentages) is treated through incineration, landfilling and recycling. Piease provide information to justify the estimates as weil as information on the form of recycling referred to.

Question 3. Emissions in the end-of-life phase: With respect to waste management options, additional information is requested on the effectiveness of incineration under normal operational conditions (for different waste types, e.g. hazardous, municipal) with respect to the destruction of PFAS and the prevention of PFAS emissions.

General Statement: Textile production in Germany is carried out under the highest environmental standards! Encourage Textile industry to achieve further progress in developing innovative environmental technologies.

The German textile industry has measurements starting from 2005/2006, which are showing the significant reduction of PFAS in the wastewater of textile companies – because of the RMM.

North Rhine Westphalia (NRW) started 2005/2006 with a campaign to reduce the PFT Emissions in the surface water. They initiated a round table and invited representatives of the associations that were known to have PFT emissions, because they wanted to reduce the emissions at the source. These were:

- Electroplating (metal and plastics) (5,000 ng/l and more)
- paper production
- paper recycling
- film recycling (up to 200,000ng/l)

- landfill leachate
- waste recyclers
- laundries with after impregnation
- textile industry (up to 2,000ng/l were measured at that time, but it was after the industry was aware of this problem; we guess the emissions were higher earlier)
- Fire fighters

They measured from 2008: PFBA, PFPA, PFHxA, PFHpA, PFOA, PFNA, PFOS, PFDA as total PFT. We had a few companies with PFF emissions, but at that time they all used C8, so with PFOA; when C6 started, the emissions of PFHxA increased slowly. Within the round table they all signed a letter of intent to reduce those emissions. The German textile industry started with the project “production integrated environmental protection”: the residual liqueurs in the padding process were held back (not only from PFT, but after the use of different dangerous substances).

Model calculation (EU wide) of initial textile finishing PFHxA/RS emissions based on the input of perfluorinated C6-telomers (already provided for the PFHxA restriction):

Model calculation:

- Assumed annual EU consumption: 10,000t (10,000,000kg) used in the initial finishing of textiles in EU textile mills.
- REACH regulates the content of impurities like PFOA and associated substances with 1.000 ppb = 1 ppm, the same regulation is proposed for PFHxA/RS. Therefore, these amounts are chosen for the calculations ahead.
- So, the annual content of impurities is 10 kg/a in the EU.
- A worst-case recipe contains 200g/L of fluorinated auxiliary agent (20%) which leads to 2 kg causing possible emissions.
- Assuming that 95% of the padding liquor remains on the fabric, as emissions during applications only occur if the padding liquor is diluted to the wastewater, then the emissions per year are 100g in the EU.

With BAT technologies (as written in the new BREF/IED for the textile industry) this is reduced further towards zero PFAS immissions, by collecting the residual finishing liquids for reuse or incineration. The German Textile industry is doing the utmost effort to implement risk management measures to minimize the PFAS-related use, human exposure and emissions to the environment. This can be clearly inferred also by the fact that PFAS are applied in line with increasingly stringent EU provisions to minimize the release of leftover in the environment as defined under the TXT-BREF document, particularly the Best Available Techniques (BAT) n° 17.

Question 4: Impacts on the recycling industry: To get an understanding of the impacts of the proposed restriction on the recycling industry, information is requested on: a. The impacts that the concentration limits proposed in paragraph 2 of the proposed restriction entry text (see table starting on page 4 of the summary of the Annex XV restriction report) have on the technical and economic feasibility of recycling processes (together with a clear indication on the waste streams to which the described impacts relate). b. The measures that recyclers would need to take to achieve the proposed concentration limits. c. The costs associated with these measures.

The German Textile Industry already provided different solutions for the end of life phase, some examples:

- **PPE:** PPE must have a long service life, quantities and charges are known to the user (employer). The latter has an obligation for these long service lives (until e.g., the warranty period has expired, sometimes up to 10 years). Special equipment is usually maintained, washed, and repaired by service providers in order to maintain the functionality of the textiles. In the PPE sector, systems for return, cleaning and disposal have already been established in Germany. Particularly in the PPE sector, the service life of the products is characterised by ensuring lasting functionality. Physical or chemical/biological contamination of the products is applicationrelated. If they are no longer functional, they must be removed from the material cycle due to contamination. In Germany, this is guaranteed by thermal recycling by the highest requirements. Very common in Germany are incineration temperatures at above 1000°C, this disposal method is environmentally friendly, ecological and safe.
- **Private Sector:** In case of textiles used in the private sector (tents, tarpaulins, clothing, furniture), there are presently no legal requirements in Germany for collection and separation, but the situation will change due to revision of ther German Regulation. The Gesamtverband Textil und Mode e.V. (t+m) is presently working intensive for better traceability, sampling and disposal including recycling, preparation for reuse and waste prevention. For individual products such as sleeping bags, for example, there is a greater focus on reuse (e.g., passing on sleeping bags or other outdoor items for charitable use). Here a patchwork of disposal channels is noticeable. There is no uniform explanation of how end consumers can recycle/dispose of their (textile) articles. Sometimes retailers or manufacturers offer repair or take-back services. Here the textile industry and its members will contribute to ensuring the transparency and disposal safety of the products.

Question 5: **Proposed derogations- Tonnage and emissions:** Paragraphs 5 and 6 of the proposed restriction entry text (see table starting on page 4 of the summary of the Annex XV restriction report) include several proposed derogations. For these proposed derogations, information is requested on the tonnage of PFAS used per year and the resulting emissions to the environment for the relevant use. Piease provide justifications for the representativeness of the provided information.

We refer to our answer to question 1 and to question 6.

Question 6: **Missing uses- Analysis of alternatives and socio-economic analysis:** Several PFAS uses have not been covered in detail in the Annex XV restriction report (see uses highlighted in blue and orange in Table A.1 of Annex A of the Annex XV restriction report). In addition, some relevant uses may not have been identified yet. For such uses, specific information is requested on alternatives and socio-economic impacts, covering the following elements: a. The annual tonnage and emissions (at sub-sector levei) and type of PFAS associated with the relevant use. b. The key functionalities provided by PFAS for the relevant use. c. The number of companies in the sector estimated to be affected by the restriction. d. The availability, technical and economic easibility, hazards and risks of alternatives for the relevant use, including information on the extent (in terms of market shares) to which alternative-based products arealready affered on the EU market and whether any shortages in the supply of relevant alternatives are expected. e. For cases in which **alternatives are not yet available,** information on the status of R&D processes for finding suitable alternatives, including the extent of R&D initiatives in terms of time and/or financial investments, the likelihood of successful completion, the time expected to be required for substitution (including any relevant certification or regulatory approvals) and the major challenges encountered with alternatives which were considered but subsequently disregarded. f. For cases in which **Substitution is technically and economically feasible** but moretime is required to substitute: i. the type and magnitude of costs (at company levei and, if available, at sector levei) associated with substitution (e.g. costs for new equipment or changes in operating costs); ii. the time required for completing the substitution process (including any relevant certification or regulatory approvals); iii. information on possible differences in functionality and the consequences for downstream users and consumers (e.g. estimations of expected early replacement needs or expected additional energy consumption); iv. information on the benefits for alternative providers. g. For cases in which **Substitution is not technically or economically feasible,** information on what the socio-economic impacts would be for companies, consumers, and other affected actors. If available, please provide the annual value of EU sales and profits of the relevant sector, and employment numbers for the sector.

Please note, that all detailed information on these questions is given in the confidential Annex I (t+m PFAS Database) and in the answers given in this statement.

In order to avoid contradictionary regulation and necessary rework, restrictions on the use of PFAS in the textile sector must be implemented with care. The use of PFAS containing substances for specific applications cannot be regulated in a simple and all-encompassing way without causing considerable obstacles and damage to Europe as a technology and business location. It is imperative that regulation also assesses the risk and necessity of use.

We ask therefor for a general derogation for "Technical Textiles".

The solution for the numerous technical textiles potentially affected by the protection ban in the EU is an exception for "Technical textiles" in connection with a technical limit value in accordance with DIN EN ISO 14419/oil note 3 (minimum requirement), as well as a commitment made by companies affected, to carry out monitoring of quantities used,emissions, as well as mitigation and substitution measures, and to report to the authorities. The data collected during this process will be able to close the gaps criticized by the ECHA bodies and hence form a solid basis to carry out an assessment of PFHxA and textile products, within the announced REACH PFAS follow-up regulation*, which will be based on real data and facts collected, and which will be professionally and factually correct. Our experts and all their expertise will be available to the EU commission, ECHA and the competent authorities.

Technical textiles in this sence are a collective term for textile materials (such as woven fabrics, knitted fabrics, nonwovens, felts) and textile manufactured products made from them (such as protective suits or tents) that are used primarily for their technical and functional properties and not for their aesthetic and decorative character. Thus, this definition serves to distinguish them from traditional textiles used by consumers as clothing and home textiles.

For the subdivision of the fields of application of Technical Textiles **in the sence of the requested derogation for Technical Texiles**, we refer to the terminology of the TECHTEXTIL, the International Trade Fair for Technical Textiles and Nonwovens, which is frequently used today:

- **Agrotech:** including textiles for agriculture, horticulture and forestry, such as cover textiles for early harvesting and insect protection, shading fabrics and knitted fabrics, textile irrigation systems.
- **Buildtech:** including textiles for building construction such as reinforcement fabrics, textile facades, membranes for lightweight load-bearing structures, fabrics for wind protection (facade and sarking membranes), trickle protection and sun protection textiles.
- **Clothtech:** including components for clothing and footwear, such as nonwoven interlinings, shoulder pads for clothing, shoe stiffening materials, wind and weather protection liners
- **Geotech:** mainly geotextiles for civil engineering (earthworks, road construction, railroad construction, hydraulic engineering) and horticulture and landscaping, e.g., drainage nonwovens, erosion control mats, separation layers, planting aids
- **Hometech:** e.g., textiles for interior fittings and furnishings, ceiling and wall coverings, sun protection textiles, such as awnings, ceiling suspensions, furniture components
- **Indutech:** including textiles for the (chemical) industry and electrical engineering, e.g., textile-laminated molded parts and pipes, filter nonwovens and fabrics, electrical insulation materials, surface nonwovens, trans-port belts
- **Mobiltech:** including textiles for automotive engineering, rail vehicle construction, shipbuilding such as safety belts, airbags, tarpaulins, wall linings, components for reinforced plastic parts for ship and boat building
- **Oekotech:** textiles for environmental protection such as soil sealing in landfills, textiles for waste water and air filters

- **Packtech:** packaging such as tea bags or desiccant bags, sacks, mobile containers, protective covers, etc.
- **Protech:** including protective work clothing, chemical protective suits, personal protection equipment such as bulletproof vests, military clothing such as NBC protective suits
- **Sporttech:** including sports equipment, sportswear such as climbing rope, sail, parachute, diving suit.

The advantage of this type of regulation is that it covers the wide range of applications of technical textiles, but only when the use of PFAS is necessary due to technical standards and compliance with safety requirements. This approach ensures that monitoring authorities can verify compliance with the limit value through the technical evidence and compare it with the technical requirements. If, for example, the limit value oil grade 3 is reached in a normal rain jacket, but there is no technical requirement for it, then this product is not allowed on the market.

With our examples and the evidence for the necessity of compliance with technical standards listed in Annex I (t+m Database), we would like to make an important contribution to demonstrating the necessity of exemptions for textile applications via the definition of "technical textiles" in connection with the coupling to a technical limit value. Furthermore, when considering market surveillance and enforcement, the testing according to EN ISO 14419 is very simple and inexpensive. Market surveillance authorities could thus easily check whether PFHxA is in the textile, an example of a practical test can be found in this video. Therefore, authorities could identify the presence of PFHxA and also non-compliance to ensure that only legally derogated articles are placed on the EU market.

This is the only way to ensure that essential applications for industry and society remain possible until alternatives are found. We propose the following derogation:

“Technical Textiles for which a minimum surface tension of 27.5 (mN/m) according to ISO 14419 and/or Oil number 3 or better is required according to a corresponding product standard.
From (entry into force), a natural or legal person benefitting from the derogation in paragraph XY shall provide by 31 January of each calendar year a report to the national authoritiy containing:

a) A description of their efforts on substitution of products under XY that contain fluorinated substances;
b) quantities they used in the previous year that contain fluorinated substances
c) The national authorities shall consolidate and forward the data to the Commission by 31 March every year

By (entry into force + 3 years), the Commission shall carry out a review of paragraph XY and Z in the light of new scientific information, including the availability of alternatives for articles referred to in paragraph XY and proposing amendments if indicated by the outcome of the review. As long as the Commission concludes that there is still need for these derogations this review shall be carried out every three years.

We are hopefull that the data and arguments provided are welcomed to introduce a derogation for Technical Textiles. We would be pleased if this suggestion can be taken up and are available for queries and explanations at any time.

Our umbrella organization EURATEX will also introduce this proposal into the consultation. We therefore support this, and given alternative proposals by EURATEX.

Question 7: Potential derogations marked for reconsideration -Analysis of alternatives and socio-economic analysis: Paragraphs 5 and 6 of the proposed restriction entry text (see table starting on page 4 of the summary of the Annex *XV* restriction report) include several potential derogations for reconsideration after the consultation (in [square brackets]). Theseare uses of PFAS where the evidence underlying the assessment of the substitution potential was weak. The substitution potential is determined on the basis of i) whether technically and economically feasible alternatives have already been identified or alternative-based products are available on the marketat the assumed entry into force of the proposed restriction, ii) whether known alternatives can be implemented before the transition period ends (taking into account time requirements for substitution and certification or regulatory approval), and iii) whether known alternatives are available in sufficient quantities on the marketat the assumed entry into force to allow affected companies to substitute. A summary of the available evidence as weil as the key aspects based on which a derogation is potentially warranted are presented in Table 8 in the Annex *XV* restriction report, with further details being provided in the respective sections in Annex E. To strengthen the justifications for a derogation for these uses, additional specific information is requested on alternatives and socio-economic impacts covering the elements described in points a) to g) in question 6 above.

t+m response:

The following uses relevant for the textile industry were market as potential derogations:

1) *U. [textiles for the use in engine bays for noise and vibration insulation used in the automotive industry until 13.5 years after EiF]*

Arguments, data and facts justifying a necessary exception are comprehensively presented in Annex I (t+m PFAS Database) and in our comments under points 1 and 6. The proposed exemption for "technical textiles" fully covers this application.

2) *i. [wound treatment products until 13.5 years after EiF]*

Arguments, data and facts justifying a necessary exception are comprehensively presented in Annex I (t+m PFAS Database) and in our comments under points 1 and 6. The proposed exemption for "technical textiles" fully covers this application.

3) *o. [applications affecting the proper functioning related to the safety of transport vehicles, and affecting the safety of operators, passengers or goods until 13.5 years after EiF].*

Arguments, data and facts justifying a necessary exception are comprehensively presented in Annex I (t+m PFAS Database) and in our comments under points 1 and 6. The proposed exemption for "technical textiles" fully covers this application.

Question 8: Other identified uses -Analysis of alternatives and socio-economic analysis: Table 8 in the Annex *XV* restriction report provides a summary of the identified sectors and (sub-)uses of PFAS, their alternatives and the costs expected from a ban of PFAS. More details on the available evidence are provided in the respective sections in Annex E. For many of the (sub-)uses, the information on alternatives and socio-economic impacts was generic and mainly qualitative. In particular, evidence on alternatives was inconclusive for some applications falling under the following (sub-)uses: technical textiles, electronics, the energy sector, PTFE thread sealing tape, non-polymerk PFAS processing aids for production of acrylic foam tape, window film manufacturing, and lubricants not used under harsh conditions.More information is needed on alternatives and socio-economic impacts to conclude on substitution potential, proportionality, and the need for specific time-limited derogations. Therefore, specific information (if not already included in the Annex *XV* restriction report or covered in the questions above) is requested on alternatives and socio-economic impacts covering the elements listed in points a) to g) in question 6 above.

But there is no doubt that many high-tech applications (such as certain protective clothing or important innovations such as fuel cells with appropriate membrane technology) are still not covered by the exemptions. Moreover, it is also not foreseeable which future applications will still urgently need the unique properties of fluorochemical-based polymers. If fluorochemistry is banned for many essential uses in the EU, the need for applications on this basis will not

disappear – rather, entire value chains will be relocated outside the EU with lower environmental standards (environmental leakage) and finished products will be imported or banned if they don't meet the strict regulations. Future innovations on this technological basis will not be possible in the EU.

The specialized EU technical textile companies and also EU-textile trademarks will technically not be able to compete with technical textiles from mainly Asian, South and Middle-American markets, which are not controlled by such restrictions. European companies will lose their competitiveness as their products will offer lower performance or often not meet standards.

We refer to the EURATEX opinion on socio-economic impacts, which also includes the results of the survey of companies in the German textile industry. The impact on German companies would be worrying, several thousand jobs would be directly affected. The indirect effects on the entire value chain as well as the effects in case of a lack of protection for workers, safety and rescue forces would be many times higher. The same applies to a possible loss of safety, functionality and durability in the field of Technical Textiles, which can only be determined in connection with the respective components and applications.

In addition, determining the impact only on the socio-economic effects related to production only covers the top of the iceberg. The core idea of articles circulating in the circular economy is reusability.

The greater leverage and losses are generated in reprocessing, for which we give an example from the medical sector:

In Germany (basis for the 2020 observation), we can assume approximately 16.5 million surgeries/interventions, all of which will be performed covered

- of which approx. 8 million "serious" operations (OP set small to large, approx. 3.5 – 5 OP coats, additional items),
- of which approx. 8.5 million minor/outpatient operations and procedures (OP set small to medium, 0 – 2 surgical gowns, additional items),
- cost rate for 8 million "serious" operations: 20€ per operation
- cost rate for 8.5 minor/outpatient operations: approx. 8 – 10€ per operation, i.e., 9€.
- market volume for "serious operations": 160 million p.a. in Germany
- market volume for minor/outpatient operations: 76.5 million p.a. in Germany
- total market volume for operations: 236.5 million p.a. in Germany

Reusable share of total volume: according to our surveys between 8% and 10%, we assume 10% for the calculation, i.e., **23.6 million p.a. in Germany.**

This would simply be eliminated for reusable if companies were no longer allowed to work with PFHxA in known conditions. The substitutes would be much more highly qualified, much more expensive and would shoot companies out of the market this way.

Jobs: Laundry jobs (laundries are the service providers that are considered to be manufacturers of medical products such as OP SETs/sleeves, since they market them as "fully refurbished" after each reprocessing):

- **about 600 – 700 people directly affected by the product (production),**
- **about 300 people indirectly affected by the product (logistics, administration, procurement, sales, hospital services), i.e., a total of about 1,000 people currently work for this sector.**

Further examples are given in the EURATEX statement.

Alternatives?:

According to our expertise the main components of fluorine-free DWR's (alternatives for fluorocarbons) for textiles contain:

- Modified DMP-Silicones: = containig **SVHC's like D4 – D6** (already resticted or in progress for authorisation) and as well very persistent
- (Natural) Waxes = covered already in the ongoing **REACH Microplastic restriction**
- Fattyacid modified melamines (**UBA REACH restriction for Melamine in progress**)
- Isocyanates = also in the focus of multiple **REACH regulations (e.g., OSH)**
- Crosslinkers = Blocked Isocyantes (Blocking agents like: **Butanoxime = CMR, pyrazole = persistant etc.),** or formol **(CMR)**

Therefore is already an ultimate risk that the "alternatives" to C6 will be banned also soon by other REACH, CLP-restrictions etc.

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The German textile and clothing industry is the second largest consumer goods industry in Germany with around 1,400 companies and more than 132,000 employees in Germany. German textile and fashion companies generate annual sales of around 32 billion euros (60 % of which are textiles, 40% of clothing) and are thus the leaders in Europe. Textile companies are important suppliers for industries such as automotive, aerospace, medicine, geotechnology etc. The overall association textil + mode (t+m) is the umbrella organization of the German textile and fashion industry. t+m represents the interests of the industry in the areas of economic, social, collective bargaining and education policy. www.textil-mode.de