

## Emissions of PFHxA (from C6 or others) and restriction consequences – EURATEX survey across European members

EURATEX contributes to the common efforts of calculating the emissions of PFHxA from textile products in the EU with the following information. Although the available data comes only from a few EU Member States, it can be nevertheless considered representative of the EU emissions scenario since some of the biggest producers of textile material are located in the countries listed below.

| Input submitter | Information on production and emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Information on societal costs and consequences |
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| Germany         | <p>The textile industry considers the emissions given by the DS as overestimated. Below there are several calculations of emissions based on worst case scenarios, indicating that the emissions from production are significantly lower.</p> <ul style="list-style-type: none"> <li> <b>Scenario I: calculation based on input of perfluorinated chemicals</b><br/> Assumed annual consumption: 10.000t (10.000.000kg) used in first treatment and reimpregnation<br/> REACH regulates the content of impurities like PFOA and associated substances with 1.000 ppb = 1 ppm, the same regulation is proposed for PFHxA. Therefore, these amounts are chosen for the calculations ahead.<br/> So, the annual content of impurities is 10 kg/a.<br/> A worst-case recipe contains 200 g/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 <b>emissions per year are 100 g</b>.<br/> The calculations above include re-impregnation, as the concentrations in the recipes and the ratio of auxiliary agent remaining on the fabric are comparable. </li> <li> <b>Scenario II: calculation based on thresholds form North Rhine Westphalia</b><br/> In 2005/2006 North Rhine Westphalia (NRW) started a campaign to reduce the PFT Emissions to the surface water at the source of emission. As a result, a “reaction threshold” of 300 ng/L was defined, above the emitter was obliged to take actions to minimise emissions. From the authorities a variety of wastewaters from companies from different branches has been investigated and the companies now have emissions far below this threshold. So, this is also a worst-case scenario. </li> </ul> <p><b>a. Assumption:</b></p> <ul style="list-style-type: none"> <li>wastewater emissions per textile company of 100,000 m<sup>3</sup>/a (&gt;8.000 m<sup>3</sup>/mth, ~400 m<sup>3</sup>/workday)</li> <li>content of perfluorinated substances in the wastewater lower than 300 ng/L, because the company retains residual padding liquors</li> <li>continuous emissions of perfluorinated substances<br/> <math>100 \cdot 10^{-6} \text{ l/a} \cdot 300 \cdot 10^{-9} \text{ g/l} = 30 \text{ g/a per company}</math> </li> </ul> <p>Most companies use recipes with perfluorinated substances only once or twice a week, so the calculated emissions above decrease to 10 g/a per company. So, assuming 50-100 companies have recipes with perfluorinated substances, the total <b>emission are 500 – 1.000 g/year</b>.<br/> The retention of residual padding liquors is discussed in the actual BREF-process and one of the proposed BAT.</p> |                                                |

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|         | <p><b>b. Assumption as “a” without liquor retention:</b><br/>According to measurements in NRW the content of perfluorinated substances in the waste water increases from 300 ng/L to around 2.000 ng/l, because the textile finisher does NOT retain residues of the padding liquor.<br/>The emissions of one company would increase up to 66 g/a. The <b>emissions</b> of 100 companies would increase up to <b>3 - 7 kg/a</b>, far away from the tons in the assumption of the DS.</p> <p><b>Conclusion</b><br/>Taking the calculations above into account the textile industry recommends to evaluate the emission data of the DS thoroughly. Respecting the articles for social, medical and ecological benefit treated with fluorinated chemicals (documents already handed in), the textile industry considers the emissions mentioned above as negligible.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Austria | <p><b>Opinion of TBSL (Textil-, Bekleidungs-, Schuh und Lederindustrie) concerning PFHxA Emission</b><br/>There are no emissions within the Clothing Industry, when apparel or other textiles articles are manufactured. There are also no emissions in the manufacture of gloves for emergency services such as the military and authorities.</p> <ul style="list-style-type: none"> <li>• <b>Emissions at the end of life</b><br/>In Austria thermal treatment (incineration) is required for products or waste that contain harmful substances. Thermal treatment = zero emission.</li> <li>• <b>Emission to waste water</b><br/>In Austria there is currently no obligation by national legislation to measure PFHxA in wastewater streams. The companies (textile finishing, Textile service management/laundries, textile companies) surveyed, were unable to provide any information or data on emissions.<br/>In order to provide ECHA with data on emissions of PFHxA, we suggest that ECHA should give us a unique method for measurement and calculation of the “possible” emission, because we think that there is no emission.<br/><b>It must first be clarified whether there are any emissions into the wastewater</b>, because the chemical substance has the property that it adheres to the textile product.<br/>In case of emissions, an improvement in wastewater management can be implemented. So that the use of the chemical substance in the textile sector can be granted if appropriate precautions are taken in the sites.</li> </ul> | <p><b>Consequences of PFHxA restriction – value chain</b><br/>All companies that were consulted by us, expressed the fear that they will lose their competitiveness if the finishing with C6 chemistry is banned.<br/>The Austrian companies fear that products from Non-EU countries/Asia will continue to be sold within EU. This are products that are produced under much worse environmental conditions and still use PFHxA, because of that they have still the better performance.<br/>In addition, under no circumstances should the phenomenon “not in my backyard” occur, that production is banned in Europe, but the products are still needed, sold and used in the EU. This leads to the fact that the production, the added value but also possible emissions are postponed to Non-EU countries.<br/>Do we even have enough test capacities in the EU to check the imported goods for PFHxA? Is market surveillance efficient enough?</p> <p><b>Socio-economic impact</b><br/>In 2018, the sales of the 285 companies belonging to the Association of the Textile, Clothing, Footwear and Leather Industry amounted to 4.15 billion euros. Over 4% of this turnover, that is 158 million euros, is achieved by more than 10 companies with products or services that use C6 chemistry.<br/>The equipment and reprocessing of the above-mentioned textile products with Undecafluorohexanoic acid / C6 chemistry is essential so that the affected companies can continue to offer competitive products on the market in the future.<br/>If the manufacture of these products for companies ceases, the economic benefits will be lost - there would be job losses in Austria - since the product area would migrate to Asia.<br/>In particular we would like to point out once again that the competitiveness of EU companies in the textile and clothing industry compared to their main competitors e.g. in the Asian region must be preserved.</p> |
| Belgium | <p><b>Concentration PFHxA in waste water:</b> 100 ng/l</p> <p><b>Total quantity of textile in industrial laundry:</b> 100 ton/year</p> <hr/> <p><b>Production</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b>Employment in the (technical) textile industry:</b> 18 750 people were working in the Belgian textile industry in year 2020; 7400 people were working in technical textile.</p> <hr/> <p>+ 40% of our produced fabrics contains fluorocarbons. If we can’t produce like that anymore, but if our customers can continue buying those treated fabrics outside of</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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|                                                          | <p>Uses:</p> <ul style="list-style-type: none"> <li>○ <b>Industrial Professional PPE Category Ia, Ib, Ic, IIa (already foreseen as exemption), IIc (already foreseen as exemption), IIe (already foreseen as exemption), IIIf (already foreseen as exemption), IIIi</b><br/>Subcategory-uses with examples included – <i>Apparel (protective clothing oil and gas industry) including necessary reimpregnations: 45000 kg/year</i></li> <li>○ <b>PPE Kat. I&amp;II consumer professional: 120000 kg/year</b></li> <li>○ <b>PPE Professional Military Police Public authorities</b><br/>Subcategory-uses with examples included – <i>Public authority clothing; customs authorities Plant security, Ambulance and rescue workers, German THW, Mountains rescue. Etc: 975000 kg/year</i></li> <li>○ <b>PPE Category Ia, Ib, Ic, Ic, IIa (already foreseen as exemption), IIb, IIc (already foreseen as exemption), IIId (already foreseen as exemption), IIle (already foreseen as exemption), IIIf (already foreseen as exemption), IIIi, IIIj, IIIk</b><br/>Subcategory-uses with examples included – <i>Apparel for fire-fighters, O&amp;G workers, law enforcement including necessary reimpregnations, also military in all EU countries: 95000 kg/year</i></li> <li>○ <b>Military Police</b><br/>Subcategory-uses with examples included – <i>RNBC suits and a lot of other applications) and police (riot suit and a lot of other applications): 95000 kg/year</i></li> </ul> <p>➔ Sum (all uses): 1330000 kg/year</p> | <p>Europe, this will simply mean the end of Utexbel, with +- 900 persons that will lose their job and a huge impact on some strategic suppliers which depend on Utexbel. It's not the production with fluorocarbons that should be forbidden, but the use of treated products.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ETSA<br>(European<br>Textile<br>Services<br>Association) | <p>Overall we have, group wide, around 2 Mio kg garments per year in the reimpregnation with C6 for chemical and water protection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>A possible complete ban or further limitation of the PFHxA would have an huge impact.</p> <p>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.</p> <p>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.</p> <p>The change from C8- chemicals to C6 has brought problems in itself which needed to be adjusted to/solved.</p> <p>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.</p> <p>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.</p> |

### Conclusions

EURATEX notes that the collected evidence corroborates the assumption that PFHxA emissions coming from the textile sector are considerably low.