



## CHEMTRUST, EEB AND IPEN COMMENTS TO THE ANNEX XV RESTRICTION REPORT PROPOSAL FOR THE RESTRICTION OF PFHxS

August, 13th, 2019

### GENERAL COMMENTS

The undersigning organisations support the dossier submitters conclusion on the need to restrict the use of PFHxS (Justification for restricting PFHxS (summary P3-6)):

#### **Long-term impact potential on human health and the environment:**

PFHxS is one of the worst PFAS in terms of persistence:

P39: "The human elimination half-life for PFHxS is > 7 years which is the longest of all perfluoroalkyl and polyfluoroalkyl substances (PFAS) for which data are available"

P154 "Due to their vPvB properties, minimizing the use of PFHxSs is an urgent priority. There are indications that PFHxS is likely to lead to significant adverse human health effects. Furthermore, since these substances persist and accumulate in humans and wildlife they may be impossible to remove if serious health concerns should be documented in the future."

#### **To prevent regrettable substitution:**

PFHxS is a well know substitute for PFOS and in some cases PFOA:

P 26 (and subsequent detailed information in the section): " There is evidence that PFHxS has been (and is being) used as a substitute for PFOS and PFOA in a number of applications around the World. PFHxS (and related substances) are known to be technically feasible substitutes for PFOA (and PFOS) in a number of applications (Kemi, 2017), including several where current uses of PFHxS appears minimal"

P3 "The restriction is necessary to avoid the possibility that PFHxS is used as a regrettable substitute when entry 68 of Annex XVII of REACH (Perfluorooctanoic acid) becomes effective in 2020 and to reduce the environmental emissions of the substances present in articles and mixtures imported to the EU."

#### **To regulate imported articles:**

P5: "No current intentional uses of PFHxS, its salts or related substances within the EU were reported during the stakeholder consultation or call for evidence."

P5: "a REACH restriction is proposed that will regulate imported articles containing PFHxS, its salts and PFHxS-related substances."

However, the undersigning organisations would like to provide comments regarding the concentration limit of PFHxS in mixture or article < 25 ppb (i.e. 25 µg/kg) and 1000 ppb proposed in the restriction dossier and the derogation for fire-fighting foam mixtures that were placed on the market before [date - 18 months after the entry into force of this Regulation] and are to be used, or are used in the in the production of other fire-fighting foam mixtures.”

### **THE CONCENTRATION LIMIT IN MIXTURES OR ARTICLES SHOULD BE 2 PPB IN ORDER TO AVOID INTENTIONAL USE OF PFHxS.**

As described in the Restriction Report Annex A.2., PFOA has been used in a wide variety of applications in the past in the EU and elsewhere. All of these are also potential new uses of PFHxS as an alternative to PFOA, unless PFHxS is restricted. For example:

Page 55 Restriction report: PFOA, however, was detected in most of the items (most of which were manufactured in China but also Vietnam and Bangladesh). This is of relevance because limit values on PFOA will soon apply to such articles and are likely to promote a switch to alternatives, of which PFHxS is, technically, one.

The limited set of test results of PFHxS in some consumer products presented in the dossier, show that PFHxS has been detected in concentrations below 25 ppb in several samples.

As stated in the Restriction Report on page 38, “Analytical methods for the detection of PFHxS are reported in the literature which can be used to measure PFHxS and PFASs in general in almost all environment all media.” Two methods are highlighted that have a level of quantification of 0.06 ppb.

PFHxS has been shown to be released through air emissions and leachates from landfills. Taken together with several warnings that that even relatively small annual emissions can quickly produce a large stock in the environment. (see e.g. P39 and 41), it is both crucial and feasible to keep concentrations at a minimum.

The proposed concentration limit of 25 ppb in the Restriction Report mirrors the final PFOA restriction decision by the Commission. However, it should be noted that the Dossier submitter of the PFOA restriction proposal put forward a threshold of 2 ppb for PFOA and PFOA related substances in order to ensure that these substances were not intentionally applied in these uses. The dossier included a summary of test methods showing that it is possible to achieve quantification limits for PFOA and some PFOA-related substances of 2 ppb.

The final limit of 25ppb that was finally adopted by the Commission was the result of the RAC and SEAC Committees who, following claims by industry stakeholders on the lack of availability of testing methods, changed in their opinion the scope of the PFOA restriction proposal.

Hence, noting the need to minimize potential PFHxS emissions as well as the availability of well-recognized analytical methods with low (0.6 ppb) detection limits, 2 ppb is a feasible limit that would prevent the intentional use of PFHxS and therefore the continued environmental releases of PFHxS at manufacturing sites, during use of mixtures and articles and during waste management.

In addition, the proposed limit of 1000 ppb for the sum of PFHxS related substances should be reduced by the same factor to at least 80 ppb or lower.

## **NO DEROGATION FOR FIRE-FIGHTING FOAMS (FFF) SHOULD BE INCLUDED**

### **The derogation will allow the continued releases of PFHxS to the environment**

Use of PFAS-containing fire-fighting foams is a direct route into the environment that has already contributed to contamination of soil, groundwater, drinking water, humans and the environment in countries all over the world.

Therefore, any FFF containing PFHxS should not be derogated but be destroyed in an environmentally sound manner. For developing countries, UNIDO has recommended a variety of effective non-combustion techniques, including methods suitable for PFAS destruction such as gas phase chemical reduction and ball milling (UNIDO, 2007). The updated general technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with persistent organic pollutants (POPs) under the Basel Convention lists Gas Phase Chemical Reduction as capable of destroying all POPs. Electrochemical oxidation has been demonstrated to destroy C4 – C8 PFAAs.<sup>1</sup>

The restriction does not extend retrospectively to FFF already purchased and stockpiled for the purpose of fighting fires and includes no obligation to destroy the stocks. Therefore PFHxS-bearing FFF could still be used years after the restriction come into force. P126 of the dossier mentions that fluorine based FFF have shelf lives of several decades:

P126: “fluorine containing firefighting foams having shelf lives typically between 10 years and 20 years (to a maximum of 30 years)”

Moreover, even if PFHxS is not currently intentionally used in FFF in the EU, it was the case historically (meaning that there might be stocks out there, however, possibly not too far from their expiring date).

P5: “Historical (pre-2000) use of PFHxS included apparel and leather (20%), carpets (60%), fabric and upholstery (15%), coatings (0.4%) and -fire-fighting foams (5%)”

### **Overall benefits to human health and the environment of destroying the stock of PFAS FFF should be considered.**

An initial proposal from the Dossier submitter to remove all fire-fighting foams from stocks which exceed the 25ppb limit for mixtures was discarded for economic reasons:

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<sup>1</sup> <https://www.aecom.com/wp-content/uploads/2018/10/PFAS-Info-Sheet.pdf>

P124: “The second discarded restriction option is a requirement to remove all fire-fighting foams which exceed the 25ppb limit for mixtures from stock. This restriction option would require testing and destruction by incineration of existing stocks of PFAS based foams, estimated at around 31 240 tonnes. As described in Annex A.2.9, this option would reduce the annual PFHxS emissions by a maximum of 3 kg per year. The risk reducing potential of this option is not proportional to the societal costs it would encompass.”

The societal costs are referred to the avoided environmental releases of 3kg per year of PFHxS, but the destruction of the estimated 31240 tonnes of existing stocks of PFAS based foams could potentially correspond to several tonnes of other PFAS of high concern (including PFOA and PFOS). Therefore, even if the impact on PFHxS reduction might not be so high, **the overall benefits to human health and the environment of destroying the stock of PFAS FFF should be considered.**

Also, remediation of contaminated sites is extremely expensive and should be taken into account. A Nordic Council of Ministers assessment estimates that PFAS remediation costs at the European level are expected to be in the hundreds of millions of euros at a minimum ranging from 821 million – 170 billion euros in the 31 EEA Member Countries and Switzerland.<sup>2</sup> The report also noted links between PFHxS exposure and several health endpoints that also carry costs. Annual health impact-related costs in Nordic countries due to PFAS exposure were estimated to be 52 – 84 billion euros. The authors note that exposures are rarely limited to a single substance PFAS and they share similar properties.

### **Fire-Safety Regulators, Scientists, & Industry Representatives Call for a Global Ban on PFAS Chemicals with No Loopholes for Toxic Fire Fighting Foams**

Last 24 April 2019, industry fire-safety experts from the oil and gas and aviation sectors joined with firefighter trade unions to urge governments to protect human health and the environment with a global ban PFAS chemicals and to reject loopholes for its use in firefighting foams.<https://ipen.org/news/fire-safety-regulators-scientists-industry-representatives-call-global-ban-pfas-chemicals-no>

A recent PFAS study of a large cohort of Australian firefighters found significant elevations of PFAS blood levels, far in excess of the general population in Australia (IPEN, 2019):

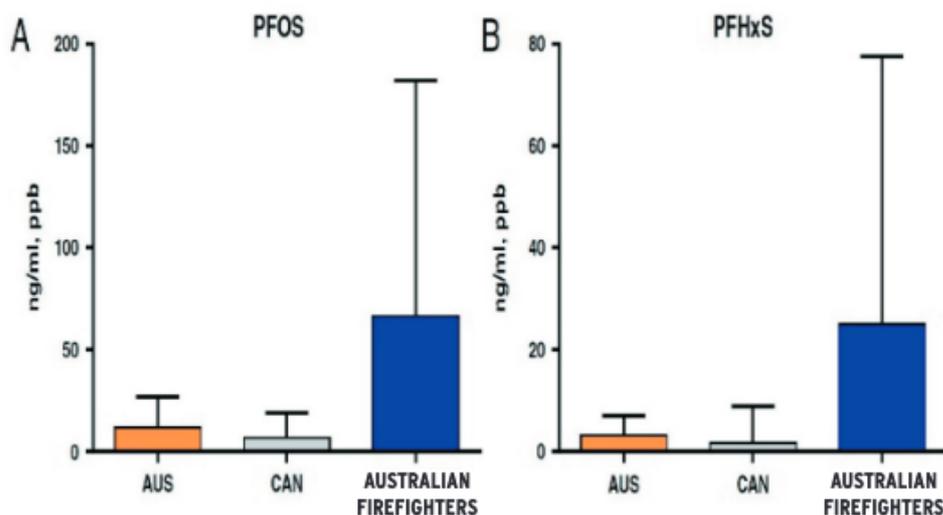
P34: “Levels for PFOS, PFHxS and PFOA in the blood of a significant proportion of firefighters are well above levels in the general population raising concerns about potential consequences for human health. Of particular concern is the increased likelihood of certain cancers developing or being promoted given that firefighters are also exposed to a combination of other chemicals that can have adverse health effects that may be enhanced synergistically by PFAS exposure.”  
“The exposure of the workforce and in particular firefighters to PFAS is of growing concern globally with evidence emerging that this is not just a legacy issue for earlier generations of workers but a continuing issue with no obvious source.”

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<sup>2</sup> Goldenman G, Fernandes M, Holland M, Tugran T, Nordin A, Schoumacher C, McNeill A (2019) The cost of inaction: A socioeconomic analysis of environmental and health impacts linked to exposure on PFAS, Nordic Council of Ministers, TemaNord 2019:516, ISBN 978-92-893-6065-4

“The highest levels of PFOS and PFHxS in Australian firefighters were an order of magnitude higher compared to the general populations in both Australia and Canada (Rotander et al. 2015).”

**PFAS levels in blood for Australian firefighters versus general populations.**  
Source: After Rotander *et al.* 2015



### Fluorine-free FFF are available at no higher cost and demonstrate similar performance

The Draft risk management evaluation from the Persistent Organic Pollutants Review Committee of the Stockholm Convention (POPRC) states:

147. The regular assessment of alternatives to PFOS under the Stockholm Convention has revealed that alternatives are available for all potential applications which could also be relevant for PFHxS, its salts and related compounds. Alternatives include both fluorinated and non-fluorinated substances as well as alternative (non-chemical) technical solutions. Information on availability, accessibility and price of alternatives, as well as information on regulatory measures and use in different countries, reveal that the socioeconomic costs of implementing a ban and/or restriction on the use of PFHxS are considered small and are outweighed by the benefits of an elimination/ regulation. High costs are estimated for remediation of contaminated sites, such as old and current fire-fighting foam training sites and airports, landfills for industrial waste, and hazardous waste, as well as for the removal of PFASs, including PFHxS, from drinking water and water sources affected by PFHxS (and other PFASs) contamination.

### No need for exemptions have been identified at a global level

The Draft risk management evaluation from the Persistent Organic Pollutants Review Committee of the Stockholm Convention (POPRC), after consultation with governmental bodies, industry, academia and NGOs recommends taking global action on PFHxS without exemptions, not even for FFF:

150. Having decided that perfluorohexane sulfonic acid (CAS No. 355-46-4, PFHxS), its salts and PFHxS-related compounds are likely as a result of their long-range environmental transport to lead to significant adverse human health and/or environmental effects such that global action is warranted; having prepared a risk management evaluation and considering the management options and noting the information on the availability of alternatives; [the POPs Review Committee **recommends, in accordance with paragraph 9 of Article 8 of the Convention, the Conference of the Parties to the Stockholm Convention consider listing and specifying the related control measures for perfluorohexane sulfonic acid (CAS No. 355-46-4, PFHxS), its salts and PFHxS-related compounds in Annex A without exemptions.**]

**Therefore, the derogation for PFHxS FFF should not be included in the EU restriction as it will hinder efforts to regulate these chemicals at the global level.**

## References

IPEN, 2019. The Global PFAS Problem: Fluorine-Free Alternatives As Solutions. Stockholm Convention COP-9 White Paper.  
<https://ipen.org/documents/global-pfas-problem-fluorine-free-alternatives-solutions>

Persistent Organic Pollutants Review Committee Fifteenth meeting Rome, 1–4 October 2019. Draft risk management evaluation: perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds. UNEP /POPS/POPRC.15/2.

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