CHEMTrust
Protecting humans and wildlife from harmful chemicals

Survey Response

Ökopol's survey on specific PFASs (C4-C7) and other fluorinated substances (precursors or similar substances) to develop a restriction proposal under REACH

Comments from CHEM Trust

April 2018

Chapter 1: Information on the Organisation

Please start by providing some information on your organization:

Environmental or consumer NGO

Please characterise the stakeholders you represent (e.g. number of companies, national, EU-wide, international):

CHEM Trust is a UK registered charity that works at European, UK and International levels to prevent man-made chemicals from causing long term damage to wildlife or humans, by ensuring that chemicals which cause such harm are substituted with safer alternatives. CHEM Trust has been in operation since 2007 and we are a pivotal player in health and wildlife protection from chemicals in the UK, the EU and globally. CHEM Trust is an accredited stakeholder at the European Chemicals Agency and an active member of the UK Chemicals Stakeholder Forum; we are also a member of the EDC Free Europe coalition and the European Environment Bureau.

CHEM Trust has been working on the concerns for environment and human health from perfluorinated chemicals (PFCs) since the organization was founded, see e.g. here:

http://www.chemtrust.org/wp-content/uploads/wwf___pbt_factsheet_january_2009.pdf

In our current work on PFCs we advocate focus on stricter controls via REACH as well as food packaging legislation, see here: http://www.chemtrust.org/pfcs/

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Please give some information, why your organisation is affected by / has interest in the envisaged restriction:

In CHEM Trust´s view, stricter regulatory controls to reduce human and environmental exposures to short chain PFASs are long overdue. This is for the following reasons:

1) **Short chain PFASs are known to be used as (regrettable) substitutes**

A detailed report for Danish Environment Ministry already stated in 2008:
A couple of years ago the main focus was on PFOS (perfluorooctane sulfonate) and PFOA (perfluorooctanoic acid) and related compounds, as these compounds have been found to be widespread in all environmental compartments in both industrial and remote sites such as the Arctic areas. Today this use has, however, shifted towards either perfluorinated substances with a shorter chain length (C6 or shorter) or other classes of polyfluorinated substances such as fluorotelomer alcohols (FTOH).
https://www2.mst.dk/udgiv/publications/2008/978-87-7052-845-0/html/default_eng.htm
In the 2015 Madrid Statement" a group of scientists and experts from a variety of disciplines expressed their concern regarding the increasing amount of worrying research about PFAS. http://greensciencepolicy.org/madrid-statement/

As already highlighted in the Helsingor Statement of concerned scientists from 2014:

https://www.sciencedirect.com/science/article/pii/S004565351400678X

- *While the shorter-chain PFASs are being introduced because they are generally less bioaccumulative, in some cases their technical performance is lower*
- *We are concerned that the current introduction of fluorinated alternatives eventually may lead to similar problems as occurred in the cases of PFOS and long-chain PFCAs. If the highly persistent and environmentally mobile fluorinated alternatives are shown to cause adverse effects in the future, it may take decades to reverse global contamination to safe levels.*

2) **Short chain PFASs are widely found in the general population including children around the world**

Already in 2011 Kato et al. analysed trends in exposure to Polyfluoroalkyl Chemicals in the U.S. from the US NHANES programme and reported findings of PFHxs in 95 % of the US population (https://www.ncbi.nlm.nih.gov/pubmed/21469664). PFHxS concentrations showed a downward trend from 1999 to 2006, but concentrations increased during 2007-2008.
A more recent study from Ye et al detected PFOS, PFOA, PFHxS, and PFNA in all children at concentrations similar to those of NHANES 2013-2014 adolescents and adults, suggesting prevalent exposure to these PFAS or their precursors among U.S. 3-11year old children (https://www.ncbi.nlm.nih.gov/pubmed/28993126

In Europe, the European Human Biomonitoring Initiative (HBM4EU) included PFAS in their list of priority chemicals and has provided a useful summary overview in a scoping document. Page 35 states:

Human exposures to PFASs have been reported in numerous studies in Europe and worldwide. Most of these studies were focused on blood or breast milk concentrations of PFOS and PFOA, while others also included PFBS, PFHxS, PFDS, PFBA, PFPeA, PFHxA, PFHpA, PFNA, PFDA, PFUdA, PFDoA, PFTrDA, PFTeDA, FOSA, MeFOSA, N-

*EtFOSA, N-EtFOSAA and diPAP. On the other hand, human exposure to e.g. 8:2 diPAP, 6:2 diPAP, 8:2 PAP, 6:2 PAP, PFDPA, PFOPA, PFHxPA or ADONA has been addressed to a small extent only; the majority of new fluorinated compounds that enter the market as replacements has not been measured in human matrices yet. (*https://www.hbm4eu.eu/wp-content/uploads/2017/08/Deliverable-4.2-Scoping-documents-on-HBM4EU-priority-substances-for-2018-July-2017.pdf*)*

CHEM Trust advocated for an increased focus on the short-chain PFCs in our respective policy briefing as input for the priority setting for future work of HBM4EU.

http://www.chemtrust.org/wp-content/uploads/chemtrust-hbm4eu-nominations-nov17.pdf

3) **Short chain PFASs are a known problem for drinking water supplies and concerns are rising**

Wilhelm et al. have already described in their publication from 2010: https://www.ncbi.nlm.nih.gov/pubmed/20556880

New and shorter-chained PFCs (C4–C7) and their mixtures are being introduced as replacements. We assume that some of these "new" compounds could be main contributors to total PFC levels in drinking water in future, especially since short-chained PFCs are difficult to remove from drinking water by common treatment techniques and also by filtration over activated carbon.

Meanwhile this concern has grown into an enormous problem. It illustrates not only a growing threat to the human health but also the immense costs for society who is now faced with the question about clean-up and improved water purification. All future regulatory options that would allow continued use of PFCs for certain uses must ensure that further water contamination is prevented. Furthermore, polluter pay regimes should be set up to deal with current contaminations.

A recent overview of all concerns on short PFASs have been summarised in the UBA workshop summary from the `International workshop for authorities on the assessment of risks of short-chain per- and polyfluoroalkyl substances (PFASs)´ – 24/25.10.2016 Berlin:
http://www.reach-info.de/dokumente/short-chain_workshop_summary.pdf

Most important points include:

- *Short-chain PFASs can occur in raw water and can therefore be found in drinking water.*
- *Short-chain PFASs cannot be eliminated from water with the commonly applied measures. Furthermore, modern technologies are ineffective in removing short-chain PFASs from water.*
- *Ubiquitous presence of short-chain PFASs in aquatic systems might lead to continuous background exposure to short-chain PFASs.*
- *Short-chain PFASs can be taken up by plants and have already been found in edible crops.*
- *Exposure via food might lead to increased exposure, due to the consumption of water rich edible plant (parts) contaminated with short-chain PFASs.*
- *Short-chain PFASs show a relevance in organisms:*
    - *toxicokinetic experiments illustrate bioavailability of short-chain PFASs.*
    - *protein interactions are similar to that of long-chain PFASs.*

- *the half-lives of short-chain PFASs enable sufficient exposure durations for provoking adverse effects in organism.*

- *Exposure via background concentrations of short-chain PFASs may affect sensible population groups or development stages.*

- *Due to the prognosticated increasing use of short-chain PFASs (based on substitution of long-chain PFASs), background concentrations might reach toxic levels.*

- *Effects cannot be sufficiently predicted and experimental data are not suited to describe potential long term effects with adequate clarity.*

In conclusion, the participants shared the opinion that the intrinsic properties and the known exposure profile of short-chain PFASs would justify to initiate EU-wide risk management measures for short-chain PFASs.

Following these 3 reasons outlined above, CHEM Trust therefore welcomes this call for information and argues that restrictions for short-chain PFAS should be put in place as soon as possible in order to provide the right market signal to move away from these persistent chemicals. It would not only be a necessary step to create a clean circular economy but also to provide urgently needed protection for people and our ecosystems.

Chapter 2: Relevance of fluorinated compounds

What are the main uses of fluorinated substances in your sector?

In general, PFAS have been used to make non-stick frying pans, waterproof clothing, stain-resistant fabrics and many other products that lead to exposure of the environment and the general population. A particular worry is their use in food contact packaging, where PFC's grease proofing properties have made them desirable for fast-food packaging such as pizza boxes and microwave popcorn bags. It's very hard to know which products contain PFCs and impossible to avoid them as consumers. During production, use and disposal there is also environmental contamination resulting in concern for drinking water supplies.

A recent study published in September 2017 by the EU Commission in the context of the development of the EU Strategy for a non-toxic environment highlights that `The thousands of new short-chain PFAS marketed by producers as "safer" than the long-chain PFOS and PFOA are also extremely persistent.´ It concludes that the `evidence of their toxicity and of their presence in the environment is mounting´ and refers to major gaps in EU legislation which need to be closed to better control PFAS (see in particular the sub-study on very persistent compounds).
https://publications.europa.eu/en/publication-detail/-/publication/89fbbb74-969c-11e7-b92d-01aa75ed71a1/language-en/format-PDF

Are they used as short chained PFASs (the C4-7 PFASs itself)?

Yes

Are they used as polymeric compounds (e.g. fluorotelomers etc.)?

Yes

Please indicate (as far as you can), which PFASs are relevant for the sector (you can address different levels, e.g. chemical groups, generic descriptions or list specific Substances by names, CAS-No. etc. Please separate by (,)

Most environmental monitoring data are found for PFOS and PFOA, as well as with long-chain PFCs. The most frequently investigated short-chain PFAS is PFHx.
The Nordic Council recently came up with very useful recommendations on PFAS, such as the proposal to develop a standardised method for monitoring total organic fluorine with a low detection limit in various matrices including products and in human blood. They also described the need for mechanistic studies of the effects and fate of PFASs in the environment and biota to facilitate read-across and to avoid pseudo-substitutions.

http://norden.diva-portal.org/smash/record.jsf?pid=diva2%3A1120881&dswid=-4023

Chapter 3: Evaluation of the restriction proposal

How do you evaluate the general need to continue the use of PFASs?

As outlined above, from CHEM Trust´s perspective it is a failure of the current regulatory system that allowed replacement of long-chain PFAS with short-chain PFAS in wide-spread consumer applications despite their persistence and mobility. The goal should be the replacement of the whole chemical group. Exemptions should only be allowed for applications with essential societal uses if there are no safer alternatives available.

Fortunately, some companies have already started to look for-PFAS free or PFAS reduced solutions in their businesses (most notably the outdoor company sectors following the pressure from Greenpeace DETOX campaign) and other sectors are slowly following suit, see e.g. new guide from US food packaging sector: http://blogs.edf.org/health/2018/03/13/fsap-food-packaging-stewardship/

Danish retailer coop has called for restrictions as PFCs belong to their company`s dirty dozen which they committed to phase-out. https://chemicalwatch.com//59211/danish-retailer-urges-ban-on-bisphenols-and-fluorinated-substances-in-fcms

In an analytical survey of PFASs in food packaging carried out by European consumer organisations BEUC in 2017 more than half of the tested packaging materials were negative in the initial screening tests. (see http://www.beuc.eu/press-media/news-events/harmful-substances-found-fast-food-packages-across-europe) The evidence provided by that study demonstrates that alternatives do exist for these uses.

These examples highlight that some proactive actors have started to move, but this concerns only a few companies most exposed to close consumer scrutiny. Stricter regulatory controls are essential to help in the shift to safer alternatives across the board. As a priority, every use of PFASs in consumer products should be phased out asap.

Do you agree with the following statements?

Please choose the appropriate response for each item

PFASs are a high risk for the environment: **fully agree**

Uses should be restricted, even if no alternatives are available: **fully agree**

PFASs should be restricted in all consumer uses: **fully agree**

PFASs should be restricted in all professional applications: **agree**

PFASs should be allowed in very specific applications with high relevance for the society: **disagree**

If you agreed or disagreed to one of the statements above, you can now provide arguments for your position (you can e.g. describe applications that might qualify for such exemptions and give further reasoning):

On the last point: `PFASs should be allowed in very specific applications with high relevance for the society`

We disagree with this general statement.

However, there might be cases where it may be deemed necessary for a transitional period to give a very specific exemption from a general ban. All exemptions would have to be well-defined, very specific applications with high relevance for the society and only be given for a short period under the following conditions:

- No safer alternatives are available (and higher costs should not play a role)
- There are obligations for monitoring and specific measurements (paid for by the company)
- There are regular reviews whether safer alternatives (including other technologies and materials) have become available and if they have, they must be used

See also our positions and argumentation provided in response to the other questions to his survey.

What are main obstacles for substitution of PFASs?

One of the major obstacles frequently mentioned are data gaps., as pointed out in this useful analysis on the fluorinated alternatives to long chain PFAS by Wang et al, 2013

https://pdfs.semanticscholar.org/90e8/3aafa979feff8f86465c41d3604bcf7cc846.pdf

In CHEM Trust perspective these data gaps should not be used as an excuse to delay the regulation of short-chain PFCs. Rather it should be the task of industry to proof the safety of the foreseen uses, as is the basis in REACH. The solution would be a group restriction for all short-chain PFAS as a group to encourage manufacturers and users to innovate and develop safer alternatives, processes and materials.

CHEM Trust recently highlighted the importance of increased use of grouping in regulatory controls in our recent report: ***"****From BPA to BPZ: a toxic soup? How companies switch from a known hazardous chemical to one with similar properties, and how regulators could stop them****"***, http://www.chemtrust.org/toxicsoup/

If you want to provide any other aspect in regard to the envisaged restriction proposal, you can provide these aspects in the text box below or upload a document in standard format (word, PDF) below.

1) Additional information from the US which may be interesting in the context of definition and scope of an envisaged restriction:

Just recently, in March 2018, the US state of Washington decided on two bills for a ban of PFAS, in fire fighting foams as well as in certain food packaging (to paper and plant fibers). Most interestingly and worth noting is that the applied definition is the existence of carbon-fluorine bonds:

"Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS 4 chemicals" means, for the purposes of firefighting agents and 5 firefighting equipment, a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

http://lawfilesext.leg.wa.gov/biennium/2017-18/Pdf/Bills/Senate%20Bills/6413.pdf

and

http://lawfilesext.leg.wa.gov/biennium/2017-18/Pdf/Bills/Session%20Laws/House/2658-S.SL.pdf#page=1

So far, 16 bills to regulate PFASs have been introduced in nine states, and US EPA plans to hold a summit in May https://www.epa.gov/newsreleases/epa-convene-national-leadership-summit-take-action-pfas

This follows public outrage in many communities that have been impacted by PFAS water contamination from PFOA replacements (https://cen.acs.org/articles/96/i10/Chemours-told-to-cut-fluorocarbon-air-pollution-from-North-Carolina-plant.html)

2) As a last point: CHEM Trust views the stricter regulation of PFAS as part of a prerequisite to establish a clean circular economy. Only if material cycles can be trusted to result in high-quality recycling products will the circular economy be a success. See CHEMTrust briefing for details:

http://www.chemtrust.org/wp-content/uploads/chemtrust-circulareconomy-aug2015.pdf

Feedback
We might have some follow up questions to specify your answers in more detail. Do you agree, that we contact you for a potential follow up interview?

Yes

In order to identify an improvement potential, we would like to use your feedback to this survey. Please provide your feedback in the text field below.