### Overview of risk reduction approaches

Denmark has in collaboration with Germany, the Netherlands, Sweden and Norway submitted a proposal on the restriction of the manufacturing, placing on the market and the use of per- and polyfluoroalkyl substances (PFAS) in the EU. The proposal is based on the high persistency of PFAS that will lead to contamination in the environment and potential adverse effect on humans. The proposal was submitted to ECHA on the 13th of January 2023 and a prepublication was made available on the 7th of February 2023.

Denmark has a continuous consumer project program that maps, analyses and determines risk of chemicals in consumer products. This program was initialized in 2001 and continues to this day. Each year 3-4 new projects are set in motion. PFAS have been investigated on numerous occasions and the data is stored by the Danish EPA. The data is publicly available – substance names may vary.

Denmark addresses certain PFASs through EU regulations. In addition, the Danish Environmental Protection Agency included PFOA and PFOS compounds in The List of Undesirable Substances (last update in 2009) to encourage industry phase out.

The Danish Environmental Protection Agency also has requested an evaluation of health hazards by exposure to the perfluoroalkylated substances, PFOA, PFOS and PFOSA. Additional PFAS substances have furthermore been selected for a preliminary screening in relation to toxicity in order to assess the possibilities for derivation of specific quality criteria for the substances in the Perfluoroalkylated substances: PFOA, PFOS and PFOSA - Evaluation of health hazards and proposal of a health based quality criterion for drinking water, soil and ground water report (2015).

A literature review of information on human health effects and environmental fate and effect aspects of short-chain PFAS was published in 2015.

### Recent Initiatives

The ban has been in force since the 1st of July 2020" to the text "In February 2019, The Danish Veterinary and Food Administration said they were to "examine the possibilities" of a national ban on the use of all organic fluorine compounds in paper and cardboard food packaging (see press release). The national ban will apply until EU regulation of the substances in FCMs comes into force".

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In 2018, a report was published by the Danish Environmental Protection Agency on Risk assessment of fluorinated substances in cosmetic products.

#### Key Links

- Restriction of the manufacturing, placing on the market and the use of per- and polyfluoroalkyl substances (PFAS)
- List of undesirable substances 2009
- Evaluation of health hazards and proposal of a health based quality criterion for drinking water, soil and ground water

Also in 2015, a report was published on alternatives to PFASs in textiles.
## Table with key elements of risk reduction approaches

<table>
<thead>
<tr>
<th>Action</th>
<th>Path taken</th>
<th>BEPs Implemented</th>
<th>Category of PFASs addressed</th>
<th>Articles covered?</th>
<th>Life cycle stage(s) addressed</th>
<th>Method of approach</th>
<th>Public-private partnership encouraged?</th>
<th>Level of constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Included in list of undesirable substances</td>
<td>Encourage industry phase out</td>
<td>Minimisation of PFASs used</td>
<td>PFOA and PFOS compounds</td>
<td>No</td>
<td>Chemical manufacture</td>
<td>Voluntary</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

Monitoring and screening of PFASs in the environment
Link to survey
Link to criteria for 12 PFASs in soil, ground and drinking water
PFOS and its salts are subject to the export restriction under the Foreign Exchange and Foreign Trade Law

| Continuous monitoring | PFBS, PFHxS, PFOS, PFOSA, 6:2 FTS, PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFDA | Discharges from all life cycles are addressed | Monitoring | No | Criteria set with a limit of 0.1 μg/l for drinking and ground water. 0.4 mg/kg TS in soil |
Additional resources

Mist suppression with non-PFOS (perfluorooctane sulfonate) surfactants for hard chrome plating

- Case study from SubsPort
- Substitution of PFOS for use in nondecorative hard chrome plating

Potentially environmentally sounder alternatives to PFOS compounds and PFOA

- Case study from SubsPort
- More environmentally friendly alternatives to PFOS-compounds and PFOA