

## Terms of Reference

### PFASs and alternatives: Report on Commercial Availability and Current Uses

#### Background

The OECD/UNEP Global PFC Group was set up to facilitate the exchange of information on per and poly-fluorinated chemicals, focusing specifically on per- and polyfluoroalkyl substances (PFASs), and to support a global transition towards safer alternatives. The Group was established in response to the International Conference on Chemicals Management - ICCM Resolution II/5.

One of the key work streams of the group is to gather information on alternatives in an aim to understand - what are they, what are they used for, their market penetration, feasibility, effectiveness, and cost.

#### Objective and tasks

The purpose of this contract is to develop a report on Commercial Availability and Current Uses of alternatives to PFASs. The report will be organised per sector/use (see Annex). Information and data will be gathered using:

- Publically available information (e.g. information collected in the framework of the Stockholm Convention). Members of the PFC Group will be invited to provide relevant resources that could support the development of the report;
- Information collected through a data collection template that will be circulated to members of the PFC Group and that industry participants (manufacturers and downstream users) will be invited to complete.

The engagement will consist of two major parts:

1. Collect information on commercial availability and market trends of alternatives to PFASs with a description of what alternatives are being used in particular uses/sectors. The analysis should include:
  - i. A clear description of the alternative, e.g.
    - for a chemical alternative: chemical identity (CAS number, EC number), brief summary and availability of data on physical-chemical properties, human health effects and ecotoxicity, exposure potential and environmental presence, and disposal;
    - for a non-chemical alternative: description of the process/application,;
  - ii. information on efficacy, including performance, benefits and any limitations;
    - provide a comparison of capital/operating costs of the substitute or non-chemical alternative;
    - estimate of the additional costs (or cost savings) associated with using the substitute or non-chemical alternative;

- provide a summary of the relative performance (efficiency) for the identified substitute or non-chemical.

(Note that it is recognised that cost measure might vary between countries or regions but should provide indicative information)

- iii. information on the actual uptake/market penetration of the alternative and reasons for the level of uptake;
  - indication of the anticipated time frame for the substitute/ non-chemical alternative to completely eliminate the use of PFASs;
  - whether the alternative has received regulatory approval by relevant authorities for a specific use
  - whether the development of the alternative has been driven by market or regulatory pressure
  - provide the information by geographical market and by use type.
- iv. the challenges in substitution by sector or for particular uses of PFASs
  - cost and time needed to qualify an alternative;
  - functionality

2. Based on the precedent chapters, provide

- i. a summary on the status of a shift to alternatives,
- ii. the sustainability of those shifts; and
- iii. how policy could help encourage the development of sustainable alternatives to PFASs:
  - policy by international body (for example, potential certification for fire-fighting foams in civil aviation sector);
  - policy taken by industry associations to phase out some PFASs (for example, semiconductor sector);
  - policy taken by specific industry sector to research alternative substances (for example outdoor textiles).

*Alternatives will cover:*

*Non-fluorinated chemical alternatives and short chain PFASs being used as replacement in order to better understand the continued use of fluorinated substances;*

*Non-chemical alternatives, including technical alternatives.*

The report should start with an executive summary.

## ANNEX: IDENTIFIED SECTORS OF INTEREST

1. Alternative surfactants
2. Alternative repellents for textiles (clothing, upholstered furniture, furnishings, carpets, etc.)
  - a. Water-repellents / waterproofing agents
  - b. Acid stain repellents
  - c. Oil-based stain repellents
  - d. Soil repellents / soil release agents
3. Alternative impregnation agents, spot removers, stain-resistant or cleaning sprays for textiles
  - a. Waterproofing
  - b. Acid stain repellents
  - c. Oil-based stain repellents
  - d. Soil repellents / soil release agents
  - e. Spot removers
4. Alternative coatings for food contact packaging
  - a. Waterproof coatings
  - b. Grease-proof coatings
5. Alternative cosmetics / personal care product ingredients
  - a. Adsorbent
  - b. Anticaking
  - c. Antistatic
  - d. Binding
  - e. Bulking
  - f. Cleansing
  - g. Detangling
  - h. Emollient
  - i. Emulsifying
  - j. Emulsion stabilizing
  - k. Film forming
  - l. Hair conditioning
  - m. Skin conditioning
  - n. Solvent
  - o. Surfactant
6. Alternative firefighting foams
7. Semiconductors
8. Galvano industry
9. Mist suppressant agent in chromium plating