POPs IN ARTICLES AND PHASE-OUT OPPORTUNITIES - A PUBLICATION IN THE FRAME OF THE STOCKHOLM CONVENTION

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Introduction

The Stockholm Convention on Persistent Organic Pollutants (POPs)[1] was adopted in 2001 and entered into force in 2004. It is a global environmental treaty that aims to protect human health and the environment from Persistent Organic Pollutants (POPs) [1].

Exposure to POPs can lead to serious health effects including certain cancers, birth defects, dysfunctional immune and reproductive systems together with greater susceptibility to disease.

Substitution of POPs by safer alternatives is the best and most effective way to eliminate these chemicals from articles and products and to reduce and prevent environmental contamination and exposure of humans. In the frame of the Convention a "Guidance on considerations related to alternatives and substitutes for listed persistent organic pollutants and candidate chemicals (2009)"[2] have been prepared by the POPs Review Committee with the objective of promoting the use of alternatives under the Convention to protect human health and the environment.

A 'POPs-free initiative' has been initiated by the Secretariat of the Stockholm Convention which was intended to facilitate work on the identification of POPs-free products and to improve the exchange of information on alternatives and substitutes to POPs[3]. This initial 'POPs-free initiative' pilot project[3] engaged with companies and tested products to verify the absence of POPs. Following the completion of the project and presentation of its outcomes at the Fifth meeting of the Conference of Parties to the Convention in April 2011[3], UNEP/SSC sought further opportunities to engage with Parties, industries and other relevant stakeholders to promote innovative approaches in the introduction of POP alternatives and substitutes in products. Therefore, as a follow up of the 'POPs-free initiative' an electronic publication is currently developed compiling information on alternatives to POPs and phase out opportunities and to further improve the exchange of information on alternatives and substitutes to POPs from different stakeholders, including governmental agencies, industry, civil society and the research community. The publication presents a review and compilation of available information for a multi stake-holder expert dialogue. Examples of good practices are compiled as case studies and could be replicated in different countries.

This contribution gives a brief overview on the publication with the aim to inform the scientific POPs community to stimulate discussion and to get further input in the further development of the publication.

Materials and methods

Information on POPs alternatives and other approaches to phase them out were reviewed, then compiled. As one major source, the documents developed by the POPs Reviewing Committee (POPRC) on POPs alternative which were/are developed during the evaluation of POPs candidates, were reviewed and relevant reports and information were included in the publication.

Furthermore, work on POPs alternatives conducted by Parties to the Convention and other governments, as well as, industrial stakeholders were assessed and where appropriate included. Also, relevant work and studies from the research community and NGOs were included. Furthermore, international experts, including country representatives, regional centres and members of the POPRC contributed with individual case studies to this publication.

Results and discussion

Provisions in the Stockholm Convention related to alternatives

The Stockholm Convention contains several provisions such as:

- Pursuant to Article 9, each Party to the Convention is to facilitate or undertake the exchange of information relevant to "alternatives to persistent organic pollutants, including information relating to their risks as well as to their economic and social costs";
- Under Article 10, each Party, within its capabilities, is to promote and facilitate "development and implementation, especially for women, children and the least educated, of educational and public awareness programmes on persistent organic pollutants… and on their alternatives". Such programmes may include the use of safety data sheets, reports, mass media and other means of communication, and may establish information centres at the national and regional levels;
- According to Article 11, Parties, within their capabilities, are to "encourage and/or undertake appropriate research, development, monitoring and cooperation pertaining to persistent organic pollutants and, where relevant, to their alternatives and to candidate persistent organic pollutants".

These provisions need to be considered and addressed in the implementation of the Convention.

Background and aim of the publication

This publication on alternatives aims to support these provisions of the Convention and to assist Parties in their Convention implementation by providing a compilation of information on alternatives to POPs in current uses.

According to the "Guidance on considerations related to alternatives and substitutes for listed persistent organic pollutants and candidate chemicals"[2], prepared by the POPs Review Committee, the objective of promoting the use of alternatives under the Convention is to protect human health and the environment. Unlike the original POPs OCPs, dioxins and PCBs) with main exposure via the foodchain, the major exposure pathway for some of the more recently listed POPs such as polybrominated diphenlyl ethers (PBDEs) can also be other main exposure routts. Significant exposures can now arise from other pathways such as the releases of POPs from furniture, textiles pillows, carpet paddings or even polyurethane containing baby products into indoor environments[4-9]. This contaminates those environments, including house dust which can be ingested, particularly by children and infants[4-7]. Also, high PBDE levels found in gymnasts from exposure to PBDE and other flame retardants from polyurethane foam mat[8] or carpet installers[9] demonstrate POPs contamination from exposure to POPs in articles. This reinforces the pressing need to substitute POPs in consumer articles.

The chemicals considered in this publication are listed in the convention and contain polybrominated diphenyl ethers (PBDEs), hexabromocyclododecane (HBCD), perfluorooctane sulfonic acid (PFOS) and related substances, DDT, lindane, endosulfan, and PCBs.

The aim of this publication is to present information on POPs used in articles and processes in identified sectors and the availability and assessments of alternatives/substitutes. A great deal of information is already available through the work of the POP Reviewing Committee (POPRC) on alternatives and several other activities and, this report draws upon this existing work.

The information will be compiled in a simple and easily searchable way to make it accessible to party members (in particular developing and transition countries) and others interested in the substitution of POPs:

- To enhance the understanding of POPs in articles and products and indicate how to eliminate them appropriately,
- To obtain a simple overview on POPs free/POPs alternatives by linking to the available materials developed by POPRC, activities of parties, regional centres, industry, NGOs and research community.
- To assist developing country Parties and Parties with economies on transition in meeting their obligations under Articles 9 and 10,
- To provide updates on alternatives where POPRC is not updating information (e.g. on alternatives POP-PBDEs or PCB where the ordinary assessment process have been finished years ago).
- To allow easy updates on POPs free/POPs alternatives information.
- To have a user friendly, easy to update source of information, which includes POPs in processes in identified sectors, availability and assessments of alternatives and substitutes to POPs and supply chains. Also on approaches on how to add more information on the use of POPs and alternatives in articles.

- To present a review of information for parties to assist them in implementing their national implementation plans.
- To contribute to the protection of workers, downstream users, the consumers and the environment; Overall business partners and financiers prefer safer alternatives;

A publication compiling information on alternatives and promoting more environmentally benign solutions:

- Supports the search for the best and safest alternatives.
- Recognizes that Green chemistry is increasingly important as it generates more solutions and lays the foundations for sustainable production. Business partners and financiers prefer safer alternatives both to comply with legislative requirements and to protect workers, consumers, downstream users and the environment whilst avoiding potentially expensive litigation and reputational damage.
- Reduces toxic chemicals in products and wastes and therefore, helps promoting the sustainable consumption;
- Supports the waste management hierarchy and the development of a circular economy as an important component of sustainable production and consumption. In particular the listing of certain PBDEs as POPs and the need for exemption of recycling has revealed the difficulties of POPs in global recycling flows and the need to substitute POPs for protection of recycling as an important basis for a circular economy. Recognizing that our society has to move towards a circular economy with high levels of recycling, there is a particular need for substitution of POPs and other persistent toxic substances in articles and products to ensure the protection of these recycling flows.

Structure of the publication

The publication is structured in five sections:

1) Introduction

2) Snapshot of information on each POP with contemporary relevance for articles and products (PFOS, POP-PBDEs, Lindane, Endosulfan, DDT, PCB and HBCD).

In this section brief information on individual POPs are given with relevant links to related Stockholm Convention documents from the POPs reviewing process for the individual chemical as well as links to guidances for the implementation work of the POP and other useful links (Figure 1)

3) Current status/case studies of POPs free/POPs alternatives

This core section briefly introduces the key documents of the POP Reviewing Committee on alternatives for the individual POPs, as well as information on alternatives to individual POPs and phase-out opportunities from parties, industry, research community, civil society and other stakeholders.

4) How can we further enhance our understanding of POPs and alternatives to their use?

As there are currently limitations on the information available on POPs in articles and products, the publication includes approaches, strategies and recommendations on how to add more information on the use of POPs and alternatives in articles and products.

5) Conclusions and recommendations

In this final section concluding comments and recommendations are compiled. This includes recommendations from the POPRC, as well as recommendations and conclusions compiled during development of the publication from the stakeholders.

Future perspective

Only an electronic version of this publication will be developed containing links to the reports and resource materials with the option of an easy update. The electronic publication is seen as a living document and a continued work where information on substitutes will be updated as they become available based on new documents from POPs Review Committee or by other relevant publications from other stakeholders and new alternatives on the market.

Parties and other stakeholders are invited to submit information on suggest alternatives, best practice examples and other approaches to eliminate POPs and in particular, POPs in articles for possible consideration and update.

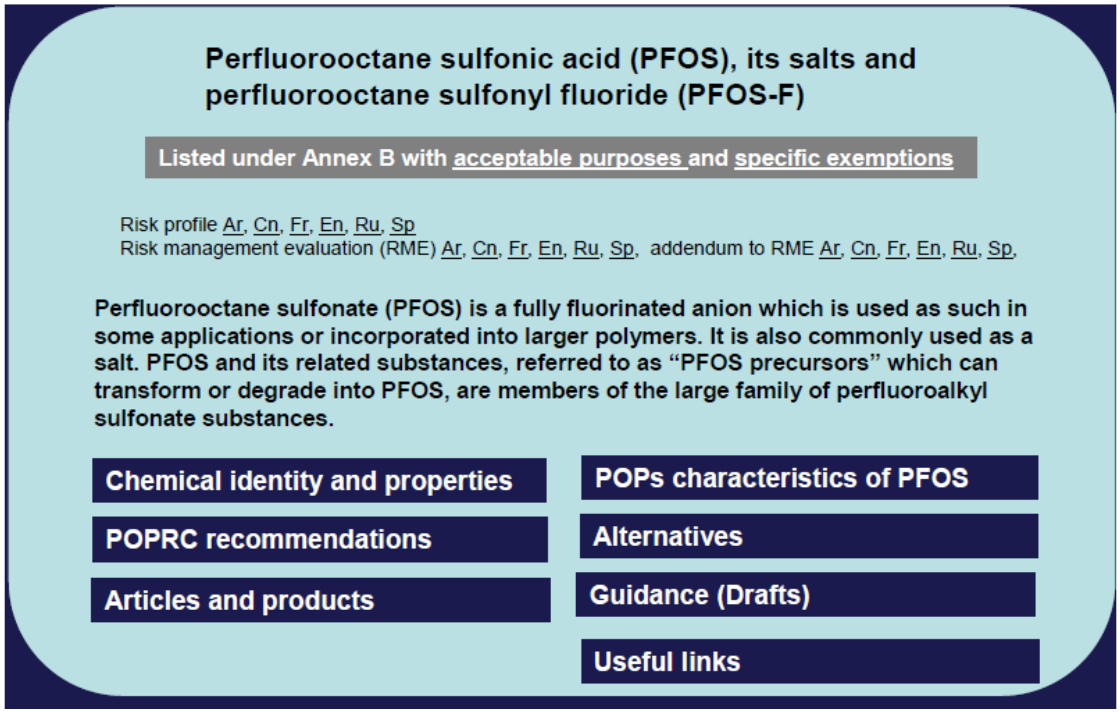

Figure 1: Example of snapshot information on PFOS in chapter 2 of the publication with relevant links to related Stockholm Convention documents from the reviewing process as well as guidances and other links.

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