Quick Guide to IPEN Views on POPRC 19

September 2023

The POPs Review Committee in its 19th meeting will address the follow key items:

Medium chain chlorinated paraffins (MCCPs) and long-chain perfluorocarboxylic acids (LC-PFCAs), their salts and related compounds:

i) Adoption of their risk management evaluations.
ii) Decide whether the chemicals should be recommended for listing in Annexes A, B and/or C of the Convention at the 2025 Conference of the Parties.

Chlorpyrifos

i) Adoption of its risk profile.
ii) Decide whether chlorpyrifos is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and/or environmental effects such that global action is warranted, and that risk management evaluations should be developed.

Guidance on Long-range environmental transport:

i) Consider the draft document.
ii) Agree on next steps.

Guidance on Labelling and other means of identification of POPs in stockpiles, articles in use and wastes

Adopting a decision to implement COP decision SC-11/12, by

i) Deciding on a date by which Parties and observers are invited to provide information to the Secretariat on experiences with and challenges encountered in developing and implementing appropriate strategies for identifying persistent organic pollutants in stockpiles, products and articles in use and in wastes and other relevant information.

ii) Establishing an intersessional working group to consider options for identifying persistent organic pollutants in stockpiles, products and articles in use and in wastes and issues related to the production, import and export of products and articles containing persistent organic pollutants.

Medium-Chain Chlorinated Paraffins (MCCPs)

MCCPs are a large class of high production volume industrial chemicals used as flame retardants, plasticizers, in metal working fluids, and as additives to paints and sealants. With the listing of SCCPs in Annex A of the Stockholm Convention for global elimination in 2017, MCCPs have assumed the role of "regrettable substitutes," and production of MCCPs now exceeds that of SCCPs.

MCCPs are ubiquitous in the global environment and found in fish, birds, mammals, and humans, including in remote regions. MCCPs are frequently measured in higher concentrations than SCCPs. Studies indicate that MCCPs adversely affect the liver, kidney, and the thyroid gland in humans, and a recent study found that MCCPs were the most abundant of the CP groups measured in human breast milk. They are found in many household products that can result in human exposures including hand blenders, toys, ovens, cable sheathing, adhesives, as well as in market foods.

The wide commercial use and current availability of safer alternatives and product design options for known uses of MCCPs indicates technical feasibility and the practicability of prohibition. Alternatives for metalworking fluids include bio-based substances that are available and effective for a wide range of temperatures and extreme pressures that are required in the aerospace, automotive, and in medical engineering applications. Alternative techniques include supercritical CO_2, dry machining, and cryogenic machining. Alternatives for MCCPs as flame retardants include safer chemical substitutions (such as phosphate-containing compounds and acrylic polymers), inherently flame-resistant materials, flammability barriers and product re-design. Bio-based oils and/or mineral oils are viable substitutes in leather production.

Conclusion

MCCPs should be recommended for listing in Annex A with no specific exemptions. This is the most efficient and effective control measure to reduce emissions of MCCPs to the environment and to achieve the aim of the Convention in protecting human health and the environment. There are viable and safer alternatives available on the market today for all uses and exemptions would unnecessarily perpetuate exposures and harm to workers, communities, and the global environment.

If a 5-year exemption is considered, it should be for a narrow, clearly defined application. Industry should be required to provide data with full justification, proof of inability to substitute, and a timeframe for removal from the market. No exemptions for production and/or use should be granted from the outset for more than five years, as indicated in Article 4 of the Convention. A provision should be included that would require Parties to restrict MCCPs in other CP mixtures, and for import and export in accordance with the provisions of paragraph 2 of the Convention. In order to prevent regrettable substitutions, LCCPs, as well as other chemical alternatives that exhibit POPs or other hazardous properties should not be considered as alternatives to MCCPs.

Long-chain perfluorocarboxylic acids (PFCAs), their salts, and related compounds

Long-chain PFCAs (with carbon chain lengths C9-C21), their salts and related compounds are, or have been, widely used in a range of both industrial and consumer applications, including in coatings, cookware, fabric/carpet protectors, textile impregnation agents, production of fluoropolymers, and firefighting foams. They all have similar structures and can therefore be expected to exhibit similar POPs properties.

Long chain PFCAs are also unintentionally produced during the manufacture of other PFAS, including fluorinated polymers and during waste incineration. Releases of long-chain PFCAs, their salts and related compounds occur throughout their lifecycle.

Long-chain PFCAs are globally widespread pollutants that have been detected on all continents and in all environmental compartments. They do not degrade under environmentally relevant conditions, they bioaccumulate and biomagnify in the food chain. They can pass through the placenta into the fetus in humans and be transferred through breast milk. Human adverse effects associated with exposure include hepatotoxicity, developmental/reproductive toxicity, immunotoxicity, thyroid toxicity and altered cardiometabolic function.

National or regional controls have been or are in the process of being taken in Canada, the EU, Switzerland, Norway, the USA, and Australia, indicating that alternatives are already available, or at advanced stages of development. Fluorine-free alternatives, as well as non-chemical solutions are available or in process for all uses of long-chain PFCAs. Any proposed exemptions must be justified by a detailed description of what alternatives have been evaluated and why they are not a feasible option, and thoroughly evaluated by the POPRC. To avoid regrettable substitution, PFAS alternatives should not be considered.

The most effective means to protect human health and the environment from the risks associated with long-chain PFCAs (with carbon chain lengths C9-C21), their salts and related compounds is therefore a complete prohibition on its production, sale and use.

Conclusion

Long-chain perfluorocarboxylic acids, their salts and related compounds should be recommended for listing in Annex A with no specific exemptions. There are viable and safer alternatives available on the market today for all uses and exemptions would unnecessarily perpetuate exposures and harm to workers, communities and the global environment.

The POPRC should include a similar recommendation to not use PFAS alternatives as has been done for PFOA and PFHxS in its decision.

Chlorpyrifos

Chlorpyrifos is a widely used organophosphate pesticide, applied as an insecticide in agriculture and as a biocide to control non-agricultural pests. It has been banned in several countries, including Morocco, Saudi Arabia, Sri Lanka, Indonesia, and Switzerland. In the European Union, it was not approved for renewal in 2019 because of its adverse health effects and the conclusion that no safe levels could be set for the substance. Chlorpyrifos is listed as a chemical of emerging concern by the Arctic Monitoring and Assessment Program (AMAP).

Despite this, it is still used in many countries of the world, as described in reports prepared by IPEN Partners posted here and here, even though agroecological approaches have been shown to be safe and viable options (see e.g. case study from Ethiopia).

Chlorpyrifos has been found in biota at different trophic levels in remote regions such as caribou, seals, and polar bears. It has also been widely detected in the Arctic in abiotic compartments such as seawater, ice, and air.

It displays high acute and chronic toxicity to aquatic organisms, birds and vertebrates, and an even higher toxicity to insects. Both *in vivo* animal studies and epidemiological evidence demonstrates provide evidence of developmental neurotoxicity, causing e.g., reduced IQ, loss of working memory, and attention deficit disorders.

Chlorpyrifos is persistent with a half-life in water greater than two months and degrades slowly in soil under both aerobic and anaerobic conditions. The degradation of chlorpyrifos is temperature dependent and it is expected to persist in colder regions for a considerable length of time. Reported log K_{ow} values (4.7 - 5.2) and log K_{oa} values (8.3 - 8.9) indicate potential for bioaccumulation in aquatic and air-breathing organisms. A BCF of >5000 has been reported for early life stages. Bioaccumulation is also supported by monitoring studies detecting chlorpyrifos in apex predators in remote regions.

Considering the high toxicity of chlorpyrifos, even moderate bioaccumulation leads to body burdens where adverse effects are seen. Concentrations currently detected in the environment are therefore already enough to cause adverse effects. In addition, the persistence and long-range transport of chlorpyrifos will lead to increased concentrations and increased harm.

It is, however, important to note that there is no requirement under the Convention for a POP to exceed any toxicological threshold value for it to warrant global action.

Conclusion

Chlorpyrifos is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and/or environmental effects, such that global action is warranted. It should therefore advance to the risk management (Annex F) stage of evaluation.

Guidance on Long-range environmental transport

The Guidance document has significantly improved throughout the review process and should be adopted at POPRC-19, taking into account the following important points for consideration:

- Any consideration of local sources should be undertaken with the same scientific rigor and requirements for independent, peer-reviewed, scientific references as the evaluation of long-range transport. The POPRC evaluation process builds on a range of studies, which minimizes the risk of local point sources playing any significant role.
- The presence of POPs in the Arctic is concerning regardless of concentrations at which they are found. As noted in the latest submission by Norway: "The accumulation of POPs in these regions is a concern of itself due to the inherent properties of POPs" and "POP levels in the Arctic are under the Convention not required to exceed toxicological threshold values."
- POPs have different intrinsic properties and therefore, may differently fulfil criteria specified in Annex D and E for long-range environmental transport. It is the task of POPRC to evaluate whether the chemicals undergo long-range environmental transport, not whether they fulfil all the potential transport pathways.
- Lastly, we want to highlight that the precautionary principle must continue to guide all work under the Convention and that this should be reflected throughout the document. Therefore, the references to it in the guidance are important to keep.

Guidance on Labelling and other means of identification of POPs in stockpiles, articles in use and wastes

Discussions during Stockholm Convention COP 11 made it clear that there are significant challenges for Parties to fulfil their obligations under Article 6 to "Develop appropriate strategies for identifying […] products and articles in use and wastes consisting of, containing or contaminated with a chemical listed in Annex A, B or C". This also makes information exchange to reduce release of POPs as mandated in Article 9 difficult.

The impacts on countries receiving these articles and wastes was underscored by Parties at the COP, as has also been shown in a range of IPEN reports, see e.g *Hazardous Chemicals in Plastic Products in African and Arabic Countries*, *Widespread chemical contamination of recycled plastic pellets globally*, and *Environmental, Food and Human Body Burden of Dechlorane Plus in a Waste Recycling Area in Thailand*.

The importance of being able to identify listed POPs throughout the supply chain has been further highlighted in risk management evaluations (e.g. dechlorane plus, UV-328), and listing decisions for hexabromocyclododecane (HBCD). The listing of pentachlorophenol (PCP)) included requirements for labeling to ensure that the product containing the listed

chemical could be easily identified. This is also reflected in regional approaches to some of the listed POPs. For decaBDE, another chemical listed under the Stockholm Convention, the EU POPs Regulation states that "articles in which decaBDE is used shall be identifiable by labelling or other means throughout its life cycle". Similarly, hexabromocyclododecane in expanded polystyrene placed on the market after 2016 should be identifiable "by labelling or other means throughout its lifecycle".

Decision SC 11/12 acknowledges challenges encountered by Parties for identifying POPs in stockpiles, products and articles in use and in wastes, and therefore requested POPRC to consider options. There are several ways of identification in place today for chemicals in plastic articles, including labelling and databases as highlighted in the POPRC document "Labelling of products or articles that contain POPs – initial considerations". Other examples include:

- Hewlett Packard (HP) has internal standards for how to physically label which types of plastics as well as which types of phthalates and flame retardants that are used in any plastic pieces that weigh more than 25 grams.
- In the EU the Substances of Concern in Products (SCIP database) catalogues articles that contain chemicals that are listed on the substances of very high concern (SVHC) on the candidate list under REACH. According to the Waste Framework Directive (2008/98/EC), since 2021, manufacturers, importers or distributors of articles released on the EU market containing these chemicals at above 0.1 % of weight must provide information to ECHA.
- Tracking systems in the automotive industry already in place can be used to identify parts in motor vehicles containing listed POPs, and facilitate the environmentally sound management of these when they become waste, e.g.:
    - the Global Automotive Declarable Substance List (GADSL) that aims to include substances directly related to the automotive industry that have been regulated from at least one country.
    - the IMDS (International Material Data System) that, according to its website, facilitates meeting the obligations placed on automobile manufacturers, and thus on their suppliers, by national and international standards, laws and regulations. All materials present in finished automobile manufacturing are collected, maintained, analysed and archived.